BOLD THINKERS DRIVING REAL-WORLD IMPACT

Evaluating Education & Training on Multiple Chronic Conditions for the Healthcare Workforce

Environmental Scan Report (Final)

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INTRODUCTION

1.1 Project Overview

The United States healthcare workforce is not prepared to provide care for the 171 million Americans expected to have more than one chronic condition by 2030. Today, persons with multiple chronic conditions (MCC) account for one-fourth of the U.S. patient population and two-thirds of U.S. health care spending. Health care systems urgently need to implement models of care that can improve outcomes for patients with MCC and the US health care workforce must continue to adapt accordingly. Learning to work in multidisciplinary teams, making clinical-community linkages, integrating physical and mental health, helping patients self-manage their conditions, coordinating care across settings and providers, as well as incorporating individual context, are critical competencies. Many health care providers, schools, and continuing education groups are considering how to better organize and equip health care workers to work with more complex patients, or how to implement new models of care such as Patient Centered Medical Homes or Accountable Care Organizations. Some groups are developing or implementing new curricula and training programs at the undergraduate, graduate, and continuing education levels. It is important to disseminate highly effective resources to support these organizations and new models of education.

The Office of the Assistant Secretary for Health (OASH) in partnership with the Health Resources and Services Administration (HRSA) is supporting the development of core competencies, curricula, and training modules for healthcare professionals who provide health care to individuals with MCC. The project advances the HHS Strategic Framework on Multiple Chronic Conditions, Goal 3 - "Provide better tools and information to health care, public health, and social services workers who deliver care to individuals with multiple chronic conditions."[1] The Abt Associates team and its partner the MacColl Center for Healthcare Innovation, is conducting the following three activities for the project: 1) conduct an environmental scan and develop a repository of existing curricula, training, and education materials for care of persons with MCC, 2) create a theoretically sound MCC training and education framework with domains and competencies needed to care for MCC patients, and 3) build a model curriculum with competencies and modules for both inter-professional and profession-specific audiences. This report describes the environmental scan.

1.1.1 Aim of the Environmental Scan

The purpose of the environmental scan was to identify and assess existing curricula, training and education materials on improving the care of persons with multiple chronic conditions for key healthcare professionals and across the education spectrum (undergraduate, post-graduate, and continuing/experiential learning). A multifaceted approach was employed: a) an environmental scan including: a search of targeted health care professional and para-professional websites; review of peer-reviewed and gray literature; and a call for materials from relevant stakeholders, b) interviews with key informants from diverse health professions and with education expertise, and c) engagement of a Technical Expert Workgroup. Each is described in turn below.

[1] U.S. Department of Health and Human Services. Multiple Chronic Conditions—A Strategic Framework: Optimum Health and Quality of Life for Individuals with Multiple Chronic Conditions. Washington,, DC. December 2010

ENVIRONMENTAL SCAN

The sections below describe the methods and findings of the Environmental Scan.

1.2 Environmental Scan Methods

1.2.1 Data Sources

Health Care Professional and Para-Professional Website Searches

The scan of MCC training and education materials began by searching websites of the leading organizations responsible for developing curricula and setting educational standards and competencies for the healthcare workforce, including 1) accreditation bodies, and 2) professional associations and educational organizations. **Exhibit 1** lists the websites (organized by discipline) selected for review by the OASH team.

The websites were reviewed by looking for topics or pages within the site that related to MCC or MCC-related competencies (e.g., care coordination, self-management, care transition, etc.) and by conducting internal website searches using the following terms: "multiple chronic conditions," "chronic diseases," "chronic conditions," "comorbidities," "curricula and multiple chronic conditions," "training and chronic conditions," "curricula and older adults," "multiple chronic conditions and geriatrics," "continuing education," "undergraduate," "post-graduate," "self-management, "care coordination," "medication management," "shared decision making," "care transitions," "team-based care," and "interprofessional education/care." Relevant links contained within these websites were followed (via a "snowball" approach) to other websites in an effort to locate additional materials that fit our criteria. This process continued until all relevant links had been followed and mined for material. In addition, limited Google searches were conducted using the terms listed above to identify sites not found during the initial searches. Lastly, websites of organizations that provide continuing education (CE) credits as well as education portals were reviewed, such as Medscape, MedEdPORTAL, the Portal of Geriatric Online Education, and Best Evidence Medical Education (BEME) Collaboration.

Exhibit 1: Websites Selected to Identify Relevant MCC Education and Training Materials

Medicine	
• Accreditation Council for Graduate Medical Education	• http://www.acgme.org/acgmeweb/
• The American Board of Medical Specialties	• http://www.abms.org/
• Association of American Medical Colleges	• https://www.aamc.org/
• American Medical Association	• http://www.ama-assn.org/ama
• Society of Teachers of Family Medicine	• http://www.stfm.org/
• American Osteopathic Association	• https://www.osteopathic.org/
• American Association of Colleges of Osteopathic Medicine	• http://www.aacom.org/
Nursing	
• American Association of Colleges of Nursing • Accreditation Commission for Education in Nursing • The National Federation of Licensed Professional Nurses • American Psychiatric Nurses Association	• http://www.aacn.nche.edu • http://acenursing.org/ • http://www.nflpn.org/
Physician Assistant	
• Accreditation Review Commission on Education for the Physician Assistant	• http://www.arc-pa.org/ • http://www.nccpa.net/
• National Commission on Certification of Physician Assistants	• http://www.paeaonline.org/
• Physician Assistant Education Association	• http://www.aapa.org/
• American Academy of Physician Assistants	• http://www.apna.org
Medical Assistant	
• American Association of Medical Assistants	• http://www.aama-ntl.org/
• Commission on Accreditation of Allied Health Education Programs	• http://www.caahep.org/
Psychology	
• American Psychological Association	• http://www.apa.org/
Social Work	
• Council on Social Work Education • National Association of Social Workers	• http://www.cswe.org/ • http://www.naswdc.org/
Physical Therapy	
• The Commission on Accreditation in Physical Therapy Education	• http://www.capteonline.org/
• American Physical Therapy Association	• http://www.apta.org/
Occupational Therapy	
• Accreditation Council for Occupational Therapy Education • American Occupational Therapy Association. Inc	• http://www.aota.org/Education-Careers/Accreditation.aspx • http://www.aota.org/
Pharmacy	
• American Association of Colleges of Pharmacy	• http://www.aacp.org/
• Accreditation Council for Pharmacy Education	• https://www.acpe-accredit.org/
• Pharmacy Technician Certification Board	• http://www.ptcb.org/
Dentistry	
• Commission on Dental Accreditation	• http://www.ada.org/117.aspx
• American Dental Association	• http://www.ada.org/
• American Dental Education Association	• http://www.adea.org/
Health Coaches, Healthcare Navigators, Practice Facilitators	
• National Society for Health Coaches	• http://www.nshcoa.com/site/

1.2.2 Literature Search

The intent of the literature search was to identify evidence-based and relevant MCC curricula, education, and training modules in peer-reviewed and grey literature. The PubMed database of the U.S. National Library of Medicine at the National Institutes of Health (accessed at: http://www.ncbi.nlm.nih.gov/pubmed) and Google Scholar were searched from January 1, 2003 through February 24, 2014 for any relevant reports, articles, reviews that addressed MCC and education/training.

The search was applied to titles, abstracts (when available), and key terms (when available).The search terms that generated the most relevant articles included ["Multiple Chronic Conditions" OR "Multimorbidity"] OR ["Comorbidty" (MeSH Term) OR "Chronic Disease" (MeSH Term)] AND ["Curriculum" (MeSH Term) OR "Education" (MeSH Term)] OR ["Health Professional" (MeSH Term) OR "Health Personnel" (MeSH Term)] AND ["Continuing Education" (MeSH Term) OR "Training" (MeSH Term)]. In addition to searching the literature for MCC-specific curricula across health professions, a search was conducted on specific competencies needed to care for MCC Patients for each healthcare profession. The search terms used to identify relevant competencies included: ["Health Professional" (MeSH Term)] AND ["Care Coordination"] OR ["Chronic Disease" AND "Nursing" (MeSH Term)] OR ["Health Professional"(MeSH Term) AND "Self-management Support"] OR ["Self-Management Support" AND "Pharmacy" (MeSH Term)] OR ["Self-Management" (MeSH Term) AND "Curricula" (MeSH Term)] OR ["Team Based Care" AND "Curriculum" (MeSH Term)] OR ["Shared Decision Making" AND "Chronic Disease" (MeSH Term)]. After limiting the search to only those articles published in the English language, a total of 400 abstracts were reviewed for further consideration. One researcher (JL) reviewed the abstracts for all of these citations and narrowed them down to 100. Articles were excluded if they a) focused on interventions, b) focused on treating single chronic conditions, c) did not address multiple chronic conditions or related competencies and domains. Further review and consideration with the project team resulted in further narrowing this list to 79 citations and full texts of these articles were obtained.

In addition, a targeted literature search (using the same PubMed and Google Scholar search terms) was performed of specific education and training journals, including: *BMC Medical Education, Journal of Continuing Education in the Health Professions, The Journal of Nursing Education, Nurse Educator, Journal of Social Work Education, Journal of Dental Education, Medical Education, Journal of Graduate Medical Education, American Journal of Pharmaceutical Education, and Journal of Physician Assistant Education.*

1.2.3 Recommended Sources and Websites

To capture MCC-specific curricula, education, and training materials outside the traditional Internet search methods, key informants, the Project Officer and OASH team members, and members of the Health and Human Services (HHS) Interagency Workgroup on MCC were asked to recommended relevant sources of MCC-specific curricula or training materials. Suggested websites and organizations included:

- The Interprofessional Education Collaborative (IPEC);
- HHS Inventory of Multiple Chronic Conditions Activities;
- Patient-Centered Primary Care Collaborative (PCPCC) Interdisciplinary Health Professional Training Programs Inventory;
- National Council on Aging;

- Stanford Geriatric Education Center;
- John A. Hartford Foundation;
- Reynolds Foundation;
- Josiah Macy Jr. Foundation;
- Pan American Health Organization (PAHO); and
- Federal workforce initiatives and resources, including HRSA's Advanced Nursing Education grants to integrate care for individuals with MCC into interprofessional education, the Centers for Medicare and Medicaid Services (CMS) National Direct Service Workforce (DSW) Resource Center, and the Substance Abuse and Mental Health Services Administration (SAMSHA) - HRSA Center for Integrated Health Solutions Workforce resources.

Grant programs or national initiatives that have -- or are in the process of --developing curricula or educational materials to train health professionals how to better care for individuals with MCC and/or older adults were identified. **Exhibit 2**, below, summarizes current initiatives to improve the care of older adults or patients with multiple chronic conditions.

Exhibit 2: Relevant Grant Programs or Initiatives

Grant or Initiative	Description
Advanced Nursing Education (ANE) Program - MCC & Interprofessional Education Grants	In 2013, the Health Resources and Services Administration (HRSA) funded schools of nursing, academic health centers, and other accredited entities to integrate the care of individuals with MCC into interprofessional education opportunities for advanced nursing education students. Projects will engage other graduate health disciplines and demonstrate the integration of the interprofessional education (IPE) model into their nursing curricula, to prepare students with the knowledge to address the needs of patients with MCC.[2]
Accelerating Change in Medical Education Grants	The American Medical Association (AMA) launched a competitive grant initiative in 2013 aimed at bringing innovative changes to medical education. Through this initiative, the AMA will work to: develop new methods for measuring and assessing key competencies for physicians at all training levels; promote exemplary methods to achieve patient safety, performance improvement and patient-centered team care; improve understanding of the health care system and health care financing in medical training; and optimize the learning environment. 11 medical schools were awarded "accelerating change in medical education" grants.[3]
Next Steps in Physicians' Training in Geriatrics Program	In 2013, the Donald W. Reynolds Foundation awarded 10 grants to medical schools, under their "Next Steps in Physicians' Training in Geriatric"" initiative. The grants will support comprehensive projects in academic health centers to train medical students, residents and faculty in geriatrics, and improve the ability of physicians to work with other health disciplines in teams to provide better care for older patients.[4]

[2]Advanced Nursing Education: http://bhpr.hrsa.gov/nursing/grants/ane.html

[3] Accelerating Change in Medical Education: http://www.ama-assn.org/sub/accelerating-change/index.shtml

[4] Donald W. Reynolds Foundation Awards $10 Million for Geriatrics Training: http://www.dwreynolds.org/News/Aging%20and%20Quality%20of%20Life%20grants%200613.pdf

1.3 Coding and Characterizing Identified Resources

MCC education and training materials were retained in an Excel database if they included the variables listed in Section 1.3.1. Where there was ambiguity about whether a resource should be included in the database (for example, if it was not clear who was the intended target of the resource, or if the topic was only peripherally related to MCC), the resource was tagged as a "maybe" resource and was reviewed and discussed by the Abt and OASH team, as well as the Technical Expert Workgroup. Each resource included in the current database was then reviewed and categorized according to the attributes described below.

1.3.1 Attributes of MCC Education and Training Materials

Materials were organized into four types of content: 1) MCC-related curricula and training resources; 2) Articles and reports; 3) Curricular Guidelines and Competencies; and 4) MCC-Specific and/or Geriatric Initiatives, Grant Programs, Inventories Websites or Videos. All four types of materials were coded by basic descriptive variables (see **Exhibit 3**, below). Only the MCC-related curricula and training resources were further coded by the characteristics and the domains from the MCC Conceptual Framework for Education and Training listed in Exhibit 3. The MCC-related curricula and training resources will be included in a searchable web-based repository hosted by the Office of the Assistant Secretary for Health.

Exhibit 3: Materials Identified in Scan and Coded by Descriptive Variables

Type of Material	Variables for All Materials	Additional Attributes (coded for Curricula only)	Competencies from the MCC Education and Training Framework (coded for Curricula only)
MCC-Related Curricula and Training Resources	• Official title • Year developed (when applicable) • Developer/organization • Hyperlink • Required Registration Fee or Subscription • Description of each material	• Target Profession • MCC or Chronic Conditions Addressed in Training • Phase of Education/Training • Type of Educational Modality • MCC Conceptual Framework for Education and Training Competency Domains	• Patient Centered Care • Clinical Reasoning and Skills for Complex Patient Care • Team-Based Care • Self-Management Support • Care Coordination and Transitions • Systems Approach
Articles and Reports			
Curricular Guidelines and Competencies			
MCC-Specific and/or Geriatric Initiatives, Grants Programs, Inventories, Websites, or Videos			

1.4 Findings: Environmental Scan

One hundred and sixty six (n=166) MCC-related resources were identified: 67 are MCC-related curricula, modules, or training program; 68 are articles or reports that describe relevant chronic conditions/MCC curriculum, frameworks, or initiatives; and 20 are health profession or population-specific curricular or competency guidelines. The remaining 11 are MCC-specific and/or geriatric initiatives, inventories, websites, or videos.

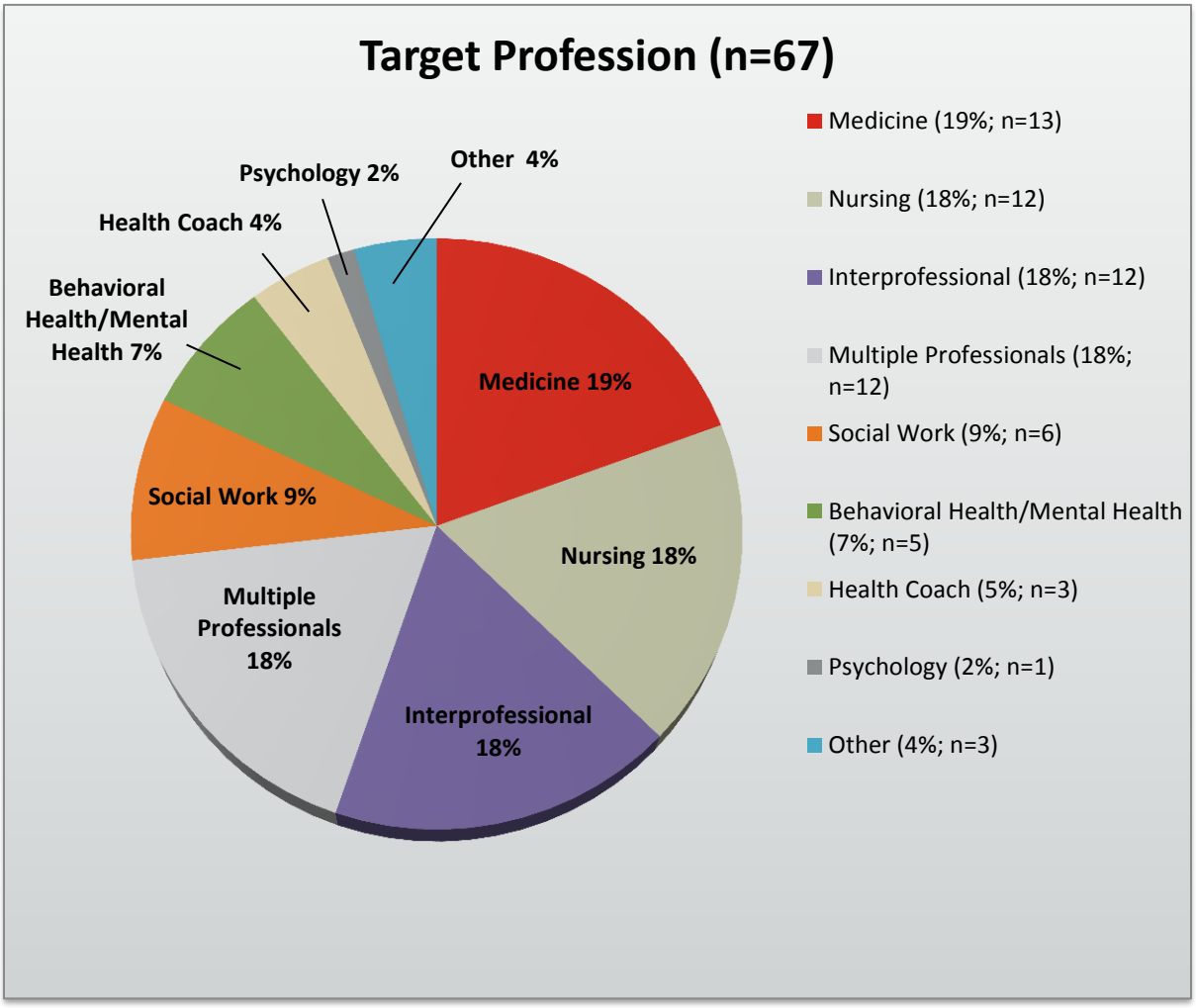
In the sections that follow the 67 MCC education and training resources are described in detail. A list of each resource type and its attributes is included in the Final Repository. The "Articles and Reports" and "Curricular Guidelines and Competencies" will be used to inform the conceptual framework and development of curricular modules and can be found in **Appendices A and B.**

1.4.1 Target Profession

Target Profession Definition: Indicates which specific profession (e.g., medicine, nursing, behavioral/mental health professional, health coach, etc.) the resource was targeted for or whether the material was for interprofessional use or for use by multiple professions. Please note that materials tagged as "interprofessional" are intended for a team of professionals from more than one specific profession (e.g. health coach and psychologist). Materials tagged as "multiple professional" are appropriate for more than one type of professional, i.e. training could be used with both case managers and nurses, but does not expect the two to work together as a part of the training.

Most of the 67 curricula and training resources included in the library were developed for specific health professionals: Medicine (n=13), Nursing (n=12), Social Work (n=6), Behavioral Health or Mental Health professionals (n=5), Health Coach (n=3), and Psychology (n=1). The remaining resources were developed for interprofessional teams (n=12), for use by multiple professionals (n=12), or other health professions (n=3), including academic faculty, care managers, transition navigators, or unspecified health professionals working with individuals with MCC. **Exhibit 4** shows the distribution of target users by profession.

Exhibit 4: Distribution of Resources by Target Profession



1.4.2 Frequency of Chronic Conditions Addressed in Training

MCC or Chronic Conditions Addressed in Training Definition: Specifies the conditions addressed in the material. In some cases specific combinations of chronic conditions are targeted (e.g., diabetes & other conditions, hypertension & other conditions, mental health and physical health, mental health and substance abuse, and other conditions). In other cases the chronic conditions are unspecified and still other cases the specific multiple chronic conditions are mentioned in the resource title, description, or learning objectives.

Only 26 of the 67 resources (39%) were developed with Multiple Chronic Conditions as the focus, meaning "multiple chronic conditions" is explicitly used or co-occurring chronic conditions were listed in the resource title, description, or learning objectives. Of the 26 MCC-focused resources, the most frequent multiple chronic conditions include co-morbid mental health and physical health conditions (n=16); co-morbid hypertension and other chronic conditions (n=3); co-morbid diabetes and other conditions (n=2); co-morbid mental health and substance abuse (n=2); and other (n=3). Materials that target chronic conditions more broadly (i.e. do not explicitly mention MCC) (n=11) were retained in the database if their learning objectives captured relevant key competency

domains (e.g., team-based care; self-management; patient-centered care). The remaining resources target chronic conditions (n=30), but do not identify specific multiple chronic conditions in their description or learning objective.

1.4.3 Distribution by Phase of Education

Phase of Education Definition: Indicates the level of education the resource was intended for, such as pre-licensure or undergraduate, graduate/post-graduate, or continuing education & lifelong learning.

Of the 67 resources and training materials, 55% are intended for continuing education & lifelong learning, (n=37), while the remaining are targeted for pre-licensure or undergraduate students (n=19), and graduate students or post-graduate professionals (n=11). **Exhibit 5** shows distribution of materials by the phase of education of target learners.

Exhibit 5: Phase of Education of MCC Curricula or Training Material

Phase of Education	No.	%
Undergraduate Only	19	28%
Graduate/Post-Graduate Only	11	17%
Continuing Education & Lifelong Learning	37	55%
Total	**67**	**100%**

1.4.4 Frequency of Educational Modality

Educational Modality Definition: Specifies the specific instructional methods or modalities such as didactic/lecture/seminar (e.g. PowerPoint presentations/vignettes); interactive instruction (e.g., e-learning/interactive-web-based modules, teaching/research assistantships, in-class research, small group learning, project work, reflection paper, faculty debrief); videos without interaction; clinical experience (e.g. supervised clinical experience or residency); simulations; standardized patients; or includes an assessment component (e.g. embedded assessment, evaluation, CE quiz).

The majority of the 67 resources identified 70% (n=47) use didactic/lecture/seminar methods for educational delivery. Didactic/lecture/seminar methods include static (i.e. not interactive) PowerPoint presentations and vignettes. Additional educational elements and modalities identified include: interactive instruction (e.g., e-learning/interactive-web-based modules, teaching/research assistantships, in-class research, small group learning, project work, reflection paper, faculty debrief), videos without interaction, clinical experience (e.g. supervised clinical experience or residency), simulations, standardized patients, or includes assessment (e.g. embedded assessment, evaluation, CE quiz).

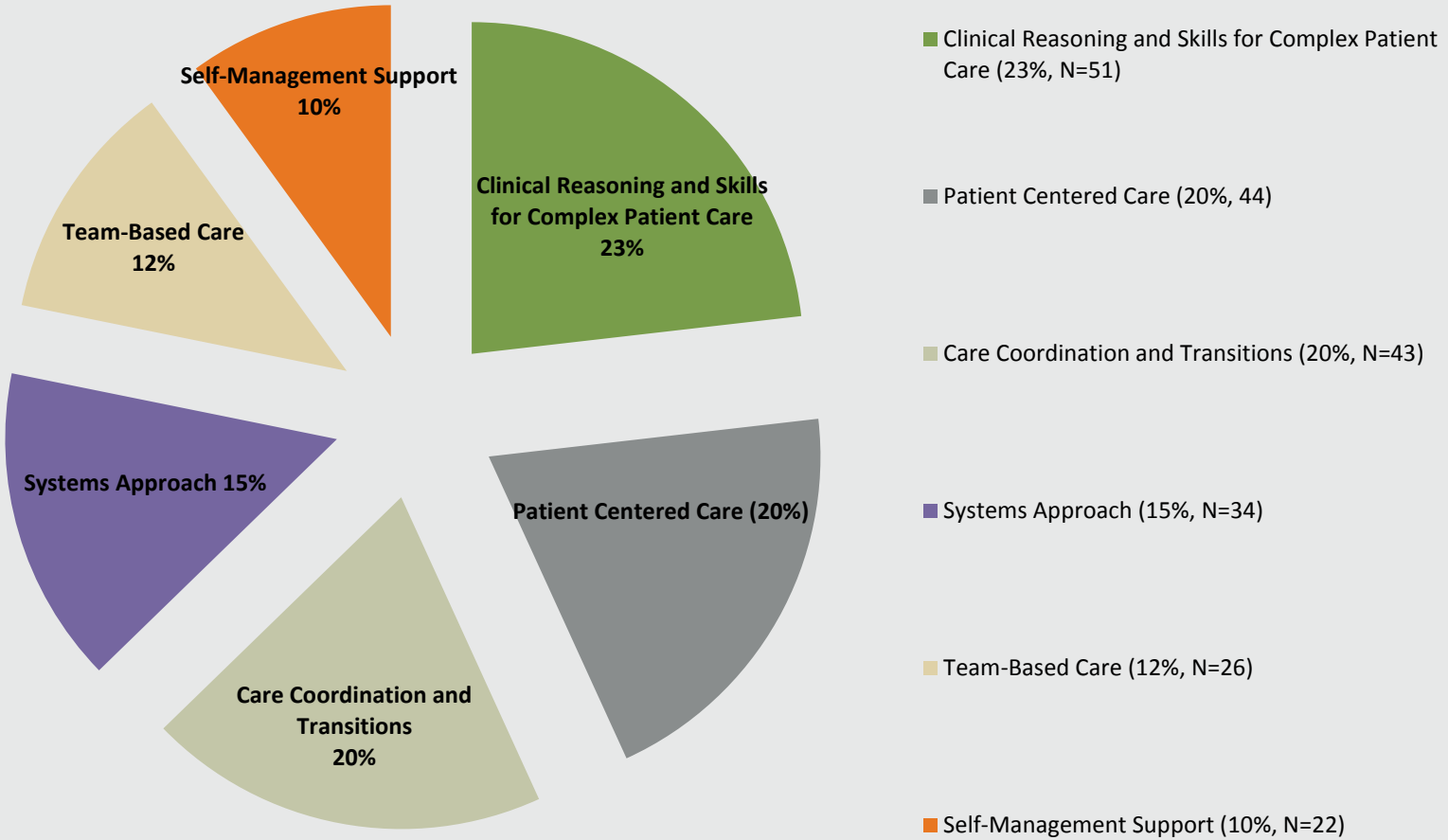
1.4.5 Conceptual Framework Competency Domains for MCC Care

Curricula and training resources were additionally coded by the competency domains listed in the MCC Conceptual Framework for Education and Training. The Framework orients curricula users such as 1) health profession education systems, 2) academic learning centers and 3) accreditation organizations, to the competencies necessary to care for those with MCC Materials were tagged by the following competency domains:

- **Patient Centered Care**: Attests to the complexity of medical, social, and psychological responses to complex illness, and the need to tailor care to the varied and changing context of patients' lives.
- **Clinical Reasoning and Skills for Complex Patient Care**: Addresses the added complexity of multiple specialist professionals, polypharmacy, the lack of complex care guidelines, and the demanding care regimens needed to address multiple chronic conditions.
- **Team-Based Care**: Currently seen as the best mechanism to efficiently offer the diversity of high quality services needed for patients with MCC.
- **Self-Management Support**: Acknowledges the central role patients with MCC and their families play in managing their illness and the appropriate role of health care delivery teams in supporting the knowledge, skills and confidence they need to do so effectively.
- **Care Coordination and Transitions**: Acknowledges the responsibility for a systematic, comprehensive, and continuous response to changing chronic care needs**,** over time and across settings**.**
- **Systems Approach**: Support the delivery of optimal care for patients with MCC through an infrastructure that assures the best clinical evidence, information technology, quality improvement strategies and fiscal management are in place.

Exhibit 6 illustrates the distribution of materials in each competency domain. Because most materials address multiple competency domains, individual resources are frequently represented in more than one category.

Exhibit 6: Proportion of Resources by MCC Competency Domains



1.4.6 Existing Repositories of Relevant Resources

In addition to specific training and curricular resources, existing website and video repositories of potentially-relevant resources on multiple chronic conditions, geriatrics, and interprofessional education were identified. These repositories may be useful to educators and trainers who are interested in MCC resources. **Exhibit 7** outlines the list of existing repositories.

Exhibit 7: Repositories of Relevant Resources

Source	Description	Hyperlink
Multiple Chronic Conditions Resource Center	The Multiple Chronic Conditions Resource Center is a one-stop (regularly updated) repository of educational, clinical and policy-related resources for schools of nursing, physician's assistant programs, and medical schools. The Center offers members exclusive access to evidence-based practices in chronic disease management, weekly updates on clinical practice resources, and policy updates. Resources range from videos and PowerPoint presentations to webinars and live events. Patient self-management is a major focus of the Center.	http://multiplechronicconditions.org/
Patient Centered Primary Care Training Programs Inventory	The Patient Centered Primary Care Training Programs Inventory is a searchable online database of nearly 100 training programs from accredited academic and training institutions throughout the United States. Programs that support health professionals and clinicians in their efforts to deliver primary care that is patient-centered and collaborative across disciplines are featured. The Inventory is searchable by education level, educational elements, organization type, state, competencies, profession and whether or not the program has been evaluated.	http://www.pcpcc.org/training-programs/list
National Center for Interprofessional Practice and Education	The National Center for Interprofessional Practice and Education is the only center in the United States providing leadership, scholarship, evidence, coordination and national visibility to advance interprofessional education and practice as a viable and efficient health care delivery model. Designated by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) to act as such, the Center welcomes health care practitioners and researchers to	https://nexusipe.org/about

Source	Description	Hyperlink
	join the community and contribute to research and evaluation efforts. Events and opportunities to request a speaker are also available on the Centers' site.	
Portal of Geriatrics Online Education (POGOE) and Web-GEM Modules	The Portal of Geriatrics Online Education (POGOe), funded by the Donald W. Reynolds Foundation, is a free repository of expert-contributed geriatrics educational materials for educators and learners in various e-learning formats. Resources include lectures, exercises, virtual patients, case-based discussions, and simulations. Web-GEMs, a series of peer-reviewed, interactive case modules for third year medical students, are also featured. Special tools such as pre-made quiz questions, videos and more can be accessed here.	http://www.pogoe.org/
GeroNet	GeroNet is the University of California-Los Angeles' extensive repository for educational, research and clinical resources on aging and the health care of older persons. GeroNet is accessible to the public, patients and their advocates, students, researchers and health care providers. GeroNet provides aged-related resources around medicine and social work, as well as community health programs such as UCLA's Healthcare 50+ for older adults and research centers such as the Anna and Harry Borun Center for Gerontological Research. GeroNet is sponsored by the UCLA Academic Geriatric Resource Center and the UCLA Multicampus Program in Geriatric Medicine and Gerontology.	http://www.geronet.med.ucla.edu/
The Council on Social Work Education (CSWE) Gero-Ed Center (National Center for Gerontological Social Work Education)	The Council on Social Work Education (CSWE) Gero-Ed Center, funded by the John A. Hartford Foundation Geriatric Social Work Initiative, promotes gerontological competencies in baccalaureate and master's level social work programs nationwide to prepare students to enhance the health and well-being of older adults and their families. The Gero-Ed Center offers a plethora of resources for faculty, practitioners, and students including teaching tools (e.g. sample curricula, case studies, videos, relevant research and competencies), and	http://www.cswe.org/CentersInitiatives/GeroEdCenter.aspx

Source	Description	Hyperlink
	webinars. A unique feature is the Centers' free virtual consulting service to support gero-enrichment efforts.	
Advanced Practice Research Nurse (APRN) Faculty Resource Center	The Advanced Practice Research Nurse (APRN) Faculty Resource Center, funded by the John A. Hartford Foundation, offers resources to prepare Primary and Acute Care Adult Nurse Practitioner (ACANP) faculty and Adult Gerontology Clinical Nurse Specialist (AGCNS) faculty to care for older adults. The APRN Resource Center provides free teaching webinars, web-based interactive case studies, a slide library addressing four evidence-based topics, evidence-based reviews of these topics, worksheets of curriculum blueprints, sample curricula, an expert consultant list and additional teaching resources.	Consultgerirn.org/apm
Geriatric-Focused Continuing Medical Education (CME) Courses from the Deep South CME Network	The Deep South CME Networks' Geriatric-Focused Continuing Medical Education (CME) Courses website (regularly updated) provides a comprehensive set of geriatric-specific clinical practitioner modules for which CME credits may be obtained. Instructions for CME certification are outlined within each module. Topics include, but are not limited to, addressing complex serious illness in older adults, evaluating medication use in older adults, shared decision making in geriatric care, and care transitions.	http://www.alabamacme.uab.edu/geriatrics.aspx
Self-Management Support Resource Library	The Self-Management Support Resource Library provides access to articles, toolkits and online trainings for clinicians around self-management support and caring for individuals with multiple chronic conditions.	http://www.orau.gov/ahrq/sms_browse.html
American Psychiatric Nurses Association (APNA) Resource Center-Multiple Chronic Conditions Resources	The Multiple Chronic Conditions Resources page of the American Psychiatric Nurses Association (APNA) Resource Center is a one-stop shop for psychiatric nurses working with patients living with multiple chronic conditions. This repository provides links to the APNA eLearning center, where modules awarding Continuing Nursing Education (CNE) credits may be accessed. Additional resources around treatment improvement protocols published by the Substance Abuse and Mental Health Services Administration	http://www.apna.org/i4a/pages/index.cfm?pageid=4435

Source	Description	Hyperlink
	(SAMHSA) and links to resources for other psych nursing topics are provided.	
TedMed Videos around Multiple Chronic Conditions (MCC)	**1)"Managing Chronic Diseases Better"** In this talk, experts discuss how to better approach and help patients prevent, manage and treat their chronic conditions and achieve better health outcomes. A focus on multiple chronic conditions in geriatric care and current barriers to care coordination are addressed. Self-management, healthy lifestyles and private-public partnership are highlighted. Available at http://www.tedmed.com/greatchallenges/challenge/294. **2) "You Say You Want a Revolution?"** This talk underscores the importance of learning about the social determinants of health, especially as they apply to chronic disease. This talk serves as a call to action to increase education around the prevention and treatment of chronic conditions. Available at http://www.tedmed.com/talks/show?id=7333&ref=about-this-speaker **3) "Does Anyone in Healthcare Want to be Understood?"** Ms. Okun discusses what it is like to be a patient in the health care system and how her organization, PatientsLikeMe, is working to develop the worlds' first patient lexicon. Available at http://www.tedmed.com/talks/show?id=47020.	http://www.apna.org/i4a/pages/index.cfm?pageid=4435 See links within descriptions of individual videos.

KEY INFORMANT INTERVIEWS

Research Aim

Twenty eight telephone discussions with expert stakeholders were held between November 2013 and May 2014. The first 8 unstructured interviews with individuals representing organizations were led by OASH at the commencement of the project and served as preliminary stakeholder interviews. They were intended to introduce the project and ask for the organizations' involvement and support.

Twenty semi-structured key informant interviews were conducted with 24 experts. The purpose was to 1) understand the key informant's role and involvement in MCC-relevant training, 2) solicit recommendations of existing MCC-related curricula and training materials, 3) discuss key competencies or skills needed to care for individuals with MCC, and 4) identify gaps and barriers to MCC education and training for healthcare providers. **Exhibit 9** contains the list of key informants, their affiliated organizations, and relevant expertise.

1.5 Key Informant Interview Methods

1.5.1 Respondent Sample

A matrix of disciplines and content expertise was developed (shown in **Exhibit 8**) to identify key informants who possessed relevant expertise and represented important disciplines. OASH and HRSA team members recommended specific individuals whom they knew through prior work in developing the project and team members from the MacColl Center for Healthcare Innovation recommended additional individuals to round out the respondent pool.

Exhibit 8: Expertise and Characteristics Sought in Key Informants

Discipline or Profession	Phase of Education Experience	MCC Competency/Expertise
• Physician • Physician Assistant • Nurse Practitioner • Nursing • Social Work • Pharmacy • Behavioral Health • Patient • Caregiver • Health Coach • Practice facilitator	• Undergraduate • Graduate • Residency • Post graduate • Continuing Education	• Interprofessional Education • Public Health • Clinic-Community Links • Care teams • Biomedical • Psychosocial • Communication and Interpersonal Skills • Shared Decision making • Cultural Competence • Systems Understanding/Practice Redesign • Care Coordination • Self-management support • Medication Management • Physical/Mental Health comorbidity • Disparities • Primary care – Specialty care – Multiple chronic conditions

1.5.2 Key Informant Discussion Guide

Prior to contacting key informants, a semi-structured discussion guide was developed to help interviewers collect comparable information from each respondent. **Appendix C** contains the discussion guide. The topics included were:

- Introduction and roles
- Training activities related to care for the MCC patient
- Existing training materials or curricula
- Three most important competencies for care of complex patients
- Training materials related to needed skills in care of complex patients such as care coordination, care transition, medication management, self-management, shared decision making, etc.
- Recommended modalities for training resources
- Gaps in existing materials and subject matter and barriers to MCC-related training
- Perspective on importance of interprofessional care
- Interest and vehicles for disseminating MCC-related materials
- Suggestions of additional key informants

Each interview was followed up with a thank you letter and any remaining questions the team had following the interview.

1.5.3 Conducting the Interviews

For the sake of consistency and quality assurance, interviews were primarily conducted by project team members Lisa LeRoy and Jessica Levin; Joanna Lopez audio recorded the conversations and took notes. Two exceptions occurred due to schedule conflicts and the interviews were led by project team member Judith Schaefer. All project team members (OASH, HRSA, Abt, MacColl) were invited to attend the calls and usually several team members attended.

1.6 Findings: Key Informant Interviews

The key informant interviewees, organizations and expertise are listed in **Exhibit 9.**

Exhibit 9: Key informant Interviews, Affiliated Organizations, and Relevant Expertise

Key Informants	Affiliation	Expertise																														
		Profession											Stage of Education				Competencies																
		Physician	Physician Assistant	Nurse Practitioner	Registered Nurse	Social Worker	Pharmacist	Behavioral Health Specialist	Patient Perspective	Caregiver	Health Coach	Practice Facilitator	Undergrad	Graduate	Residency	Continuing Education	Biomedical	Care Team/Care Coordination	Care Transition	Communication Skills	Innovation	Interprofessional Education	MCC	Medication Management	Mental Health	PCMH	Physical Health	Primary Care	Psychosocial	Public Health	Self-Management Support	Shared Decision Making
Brian Bixby, MSN, CRNP, CS Lucinda Bertsinger Karen Hirschman, PhD, MSW	U Penn School of Nursing			✓		✓							✓	✓					✓			✓										
Tom Bodenheimer, MD	University of California San Francisco (UCSF) Center for Excellence in Primary Care	✓														✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	✓		✓	✓
Barbara Brandt, PhD	University of Minnesota												✓			✓						✓										
Rita Charon, MD, PhD	Columbia University	✓												✓				✓	✓	✓	✓							✓				
Kathleen Clanon, MD, FACP	Pacific AIDS Education and Training Center (AETC)							✓	✓		✓											✓						✓				
Patricia Cuff	Institute of Medicine (IOM)															✓						✓	✓									
Rishi Desai, MD	Khan Academy	✓											✓	✓	✓	✓					✓	✓										
Emily Duffy, LCSW	Drexel University/11 St Health Center							✓					✓											✓	✓							

Key Informants	Affiliation	Expertise																														
		Profession											Stage of Education				Competencies																
		Physician	Physician Assistant	Nurse Practitioner	Registered Nurse	Social Worker	Pharmacist	Behavioral Health Specialist	Patient Perspective	Caregiver	Health Coach	Practice Facilitator	Undergrad	Graduate	Residency	Continuing Education	Biomedical	Care Team/Care Coordination	Care Transition	Communication Skills	Innovation	Interprofessional Education	MCC	Medication Management	Mental Health	PCMH	Physical Health	Primary Care	Psychosocial	Public Health	Self-Management Support	Shared Decision Making
Janice Genevro, PhD, MSW, Cindy Brach, MPP, Robert McNellis, MPH, PA	Agency for Healthcare Research and Quality (AHRQ)							✓	✓			✓														✓			✓		✓	✓
Alan Glaseroff, MD	Stanford School of Medicine – Stanford Coordinate Care	✓													✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Kristin Goodell, MD	Harvard Medical School Center for Primary Care	✓											✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Monica Guillen, MA	Union Health Center										✓			✓				✓	✓	✓		✓									✓	
Kim Keubler, DNP, APRN, ANP/GNP-BC	Advanced Disease Concepts LLC			✓				✓	✓				✓	✓	✓	✓					✓	✓	✓									
Chandrika Kumar, MD	Yale School of Medicine	✓												✓	✓		✓	✓	✓										✓				
Wendy Levinson, MD	University of Toronto	✓																			✓	✓											
Benjamin Miller, PsyD	University of Colorado Denver							✓														✓	✓		✓				✓	✓			
Monica Mix, MD	John Hopkins School of Medicine, Med/Pediatrics Residency	✓											✓	✓									✓										
Sally Okun, RN, MMHS	Patients Like Me				✓				✓									✓			✓												

Key Informants	Affiliation	Expertise																														
		Profession											Stage of Education				Competencies																
		Physician	Physician Assistant	Nurse Practitioner	Registered Nurse	Social Worker	Pharmacist	Behavioral Health Specialist	Patient Perspective	Caregiver	Health Coach	Practice Facilitator	Undergrad	Graduate	Residency	Continuing Education	Biomedical	Care Team/Care Coordination	Care Transition	Communication Skills	Innovation	Interprofessional Education	MCC	Medication Management	Mental Health	PCMH	Physical Health	Primary Care	Psychosocial	Public Health	Self-Management Support	Shared Decision Making
Ruth Stein, MD	Albert Einstein College of Medicine	✓												✓	✓						✓	✓										
Maria Wamsley, MD	University of California San Francisco (UCSF)	✓												✓	✓							✓										
Preliminary Key informant Interviews																																
Carol Aschenbrener, MD	American Association of Medical Colleges (AAMC)																✓					✓										
Geraldine (Polly) Bednash, PhD, RN, FAAN	American Association of Colleges of Nursing (AACN)				✓								✓																			
Darla Coffey, PhD, MSW	Council for Social Work Education (CSWE)					✓																										
Charles Godue, MD Branka Legetic, Enrique and Carlos Santos, MD, MPH, PhD	Pan American Health Organization (PAHO)																												✓			
Lucinda Maine, PhD, RPh	American Association of Colleges of Pharmacy (AACP)					✓																										

Key Informants	Affiliation	Expertise																														
		Profession											Stage of Education				Competencies																
		Physician	Physician Assistant	Nurse Practitioner	Registered Nurse	Social Worker	Pharmacist	Behavioral Health Specialist	Patient Perspective	Caregiver	Health Coach	Practice Facilitator	Undergrad	Graduate	Residency	Continuing Education	Biomedical	Care Team/Care Coordination	Care Transition	Communication Skills	Innovation	Interprofessional Education	MCC	Medication Management	Mental Health	PCMH	Physical Health	Primary Care	Psychosocial	Public Health	Self-Management Support	Shared Decision Making
Cynthia Reilly, BS, Pharm Justine Coffey, JD, LLM Hannah Vanderpool, PharmD, MA	American Society of Health System Pharmacists (ASHP)						✓											✓				✓		✓								
Susan Skochelak, MD, MPH Dina Lindenbeg, and Mark Quirk	American Medical Association (AMA)	✓												✓	✓	✓						✓										

Data gathered during the key informant interviews provided guidance for development of the Repository of MCC education and workforce training materials. In addition, key informants raised issues for the project team to consider regarding the design of the conceptual framework and curricula. Key informants (n=24) were asked to: recommend innovative training materials that addressed MCC; provide guidance on key competencies or skills needed to care for individuals with MCC; suggest modalities most needed or most useful in educating health professionals; enumerate barriers to training health care professionals to provide high-quality care for persons with MCC; and rate the importance of interprofessional or team-based care. Below is a summary of feedback received on each topic respectively, as well as illustrative respondent quotes.

1.6.1 Innovative Training Materials, Curricula, or Programs that Address MCC

Key informants recommended several innovative training materials, curricula, and programs that address multiple chronic conditions. **Exhibit 10**, below, highlights two unique resources identified by stakeholders.

Exhibit 10: Innovative Materials, Curriculum, or Programs on MCC

Name & Source	Description	Modality	Target Profession	Phase of Education
Interprofessional Standardized Patient Exercise (ISPE): The Case of "Elsie Smith"	Provides students with a structured learning experience working within an interprofessional health care team, using a standardized patient. The case of "Elsie Smith" involves multiple complex chronic medical conditions in an older adult with many needs and limited resources. Implemented in 2012 with 261 students participating from the schools of dentistry, medicine, nursing, nutrition, pharmacy, physical therapy, and social work. Students work in interprofessional teams to interview the standardized patient and create an integrated, comprehensive patient care plan. Faculty facilitators from participating schools/programs observe the students and lead debriefing sessions. The exercise takes	• Interactive Instruction • Clinical Experience • Standardized Patient	Interprofessional	• Pre-Licensure or Undergraduate • Graduate/Post-Grad

Name & Source	Description	Modality	Target Profession	Phase of Education
	approximately 3 hours. Achievement of the ISPE's learning objectives was evaluated through student and faculty surveys, which showed overall positive responses.			
Multiple Chronic Conditions (MCC) Resource Center	A one stop resource for the latest information to support clinical management of patients with multiple chronic conditions, symptoms and self-management. Includes: references, articles, web-links, video's, power point presentations, etc. It has three components: education, clinical practice and policy. Will serve as repository for schools of nursing, physician assistant programs, and medical programs. It is a one stop area where faculty can go and also upload slide presentations, links, PDF related to MCC.	• Interactive Instruction • Lecture/Presentations • Static Documents		

1.6.2 Key Competencies /Skills needed to Care for Persons with MCC

Key informants recommended the following key competencies or skills needed to care for persons with MCC:

- **Communication,** including motivational interviewing, counseling, and "listening with sense beyond your ears.
- **Interprofessional or team-based care.** Practitioners require the ability to collaborate with other health professionals to care for patients with MCC. Key Informants also stressed the importance of building trust with the clinical team, including the patient.
- **Compassion and empathy**, and being sensitive to the context of the patient's life.
- **Keeping the patient at the center of care.** "Giving patients the opportunity to let them give you their input before you give them all of yours."

- **Patient engagement, self-management, decision-making;** being able to provide patients with the tools they need to successfully manage their own diseases.
- **Care coordination, care transition, and follow-up,** including linking patients and families to community resources, and having the ability to recognize when a patient is falling off the expected course and adjust the patient's care plan.
- **Skills to effectively lead a team.** "People tend to think of leadership as a personality description rather than a set of tools or competencies that can be acquired…leadership skills are crucial."
- **Good understanding of polypharmacy, pharmacological management, and trade-offs;** being able to identify risk and benefits of medications for patients with multiple chronic conditions.
- **Ability to integrate multiple pathophysiologies into clinical thinking and practice.** "Essentially if your clinical role is the oncology nurse but you know those patients also have dementia and something else associated with their health, that you are able to have the capacity to consider what is the pathophysiology that is occurring – not just the molecular level (e.g., cancer) but what might be happening to the patient's mental status or cognitive status when they also have some dimension of dementia or diabetes."
- **Managing internal financing** and being a good steward of resources.

1.6.3 Modalities Most Needed or Most Useful in Educating Current and Future Health Care Professionals

Key informants described a variety of materials and educational modalities most useful in educating health professionals:

- **Clinical Hands-On Practice/Clinical Scenarios**
  - "Students really want to be in clinical settings…they don't want to be in a small group talking, but want to actually be doing patient care."
  - "The best training happens in clinical scenarios. Students learn best when practicing with a real patient…it activates learning and gives students a real feel for a patient centered experience."
- **Interactive learning environments** (including case studies, role play, simulation)
  - "In my experience, students just don't respond well to things delivered in a lecture format…it is too hard for them to really grasp, and they want to actually see it (what they are learning) on the ground."
- **Use of Standardized Patients**
  - "Even though it is a standardized patient, it just feels more real to them. I think the more authentic we can make their experiences, the better."
  - "Mannequins help with testing – the more testing you incorporate into materials, the better. Students remember things much better when tested consistently."
- **"Lectures don't work without a story."** It is crucial to actively engage students from their own experiences and to move away from didactic learning to interactive learning.
  - "The human narrative is extremely powerful"
- **Videos** - Blackboard/whiteboard type videos get the most views, shares, and likes via social media and offer more engagement with the user than with PowerPoint presentations

- **Online/virtual learning and training platforms** - such as chat rooms with providers and patients or interactive learning platforms that allow for didactic downloads, videos, and ask users to answer questions and communicate with peers or faculty
- Continuing Education (CE) Modules

1.6.4 Barriers to training health care professionals to provide high-quality care for persons with MCC

When asked to comment on gaps in training health care professionals to provide high-quality care for persons with MCC, key informants reported the following barriers:

- **Education system is too siloed (by discipline).** There is a need for cross-disciplinary learning in undergrad and post-grad training. There are also limited opportunities for different disciplines to come together yet they (students and health professional) are expected to collaborate and work well together once they get out in the clinical setting.
  - "The expectations are not aligned with what their experiences are in school and that is something that needs to change."
- **Time** (meaning the need to cover multiple topics within the time allotted) to bring students from different professions together in a meaningful way. It is difficult to arrange learning activities across health professionals; programs require different requirements and schedules.
- **Learning from peers in an ongoing capacity.**
  - "We don't do a good enough job at helping patients be our teachers. Patients will teach us things we will never learn in other ways."
- **Lack of training on how to be effective team members** in both inpatient and outpatient settings.
- **Understanding human behavior and effective communication.**
  - "We may do a good job maintaining communication among multiple disciplines under our roof, but communication becomes fragmented at best after a patient is connected with an outside specialist. I am not sure how medical training prepares specialists for creating partnerships with other disciplines to effectively treat those with MCC, but from my perspective it could use some improvements as it has been a definite hurdle for patients and the primary care team."
- **Payment models**. Currently payment models do not incentivize the kind of care needed by complex patients such as team-based care, care coordination, longer visits, etc.
- **Difficulty shifting thinking (and care) from a disease-specific to a holistic care model.** There is a need for more education on MCC rather than single conditions
  - "There was that one main chronic condition that takes the lead and the other (conditions) kind of get lost…I think it definitely affected my learning. I learned more at the health clinic about MCC than I did in the classroom."
- **Training for faculty on how to teach and practice interprofessional care**. There is a faculty "team development" that needs to happen. Not all faculty are used to working in interprofessional teams and know what that means.

1.6.5 Importance of Interprofessional or Team-Based Care

Key informants were asked to rank on a scale from 1 to 10 (1 being "not at all important" to 10 being "extremely important") how important they think interprofessional or team-based care is to effectively delivering high-quality care to persons with MCC. Of the 24 key informants, all but three ranked

interprofessional or team-based care "10" or "extremely important." Below are specific comments from key informants on the importance of interprofessional or team-based care:

- "Interprofessional or team-based care is critically important to provide the kind of contextual and comprehensive care people need 24/7 with MCC."
- "This is absolutely the most critical thing we can do in health care. It is simply impossible to get to where we need to go without achieving truly comprehensive multidisciplinary, interprofessional team based care."

TECHNICAL EXPERT WORKGROUP

In addition to facilitating key informant interviews with expert stakeholders, the Project Team engaged a Technical Expert Workgroup (TEW) of 13 individuals representing diverse groups, including academic and professional organizations. The TEW helped augment the team's understanding of the current state of MCC education materials and refine understanding of gaps in curriculum and training for preparing future practitioners to care for patients with MCC.

Aim

To ensure that a national perspective was obtained on education and training materials, a Technical Expert Workgroup comprised of twelve national experts with interest and expertise in multiple chronic conditions was selected. Representatives of diverse health professions and care delivery settings, and innovators in healthcare training and curriculum development were included.

1.7 Technical Expert Workgroup Methods

Technical Expert Workgroup members were asked to contribute in the following ways over the course of one year:

- Participate in two or more teleconference calls;
- Attend one in-person meeting;
- Review findings of an environmental scan on MCC workforce training materials;
- Provide feedback on a web-based repository of MCC workforce training materials; and
- Advise on the development of a conceptual framework and a model curriculum for the healthcare workforce on caring for individuals with MCC.

1.7.1 Technical Expert Workgroup Members

Exhibit 11 lists the 13 Technical Expert Workgroup members and their respective organizational affiliation and role. **Appendix D** provides contact information for each TEW member.

Exhibit 11: TEW Members and Organization Affiliation and Role

Technical Expert Workgroup Member	Organizational Affiliation and Role
Carol Aschenbrener, MD	*Association of American Medical Colleges*
Lynette Bradley-Baker, RPh, PhD	Director of Professional Alliance Development *American Association of Colleges of Pharmacy*
Ruth Ballweg, MPA, PA-C	Director of MEDEX NW Physician Assistant (PA) Program *University of Washington School of Medicine*
Cynthia Belar, PhD	Executive Director of the American Psychological Association's Education Directorate *American Psychological Association*
Margaret Flinter, APRN, PhD	Senior Vice President and Clinical Director *Community Health Center, Inc*

Technical Expert Workgroup Member	Organizational Affiliation and Role
Robyn Golden, MA, LCSW	Director of Older Adult Programs *Rush Medical College/Council on Social Work*
Gail Hunt, BA	President and CEO *National Alliance for Caregiving*
MaryJoan Ladden, PhD, RN, FAAN	Senior Program Officer *Robert Wood Johnson Foundation*
Christopher Langston, PhD	Program Director *The John A. Hartford Foundation*
Jane Lowers, BS	Director of Government Strategy *WebMD*
Joan Pernice, RNC, MS	Clinical Affairs Director *Massachusetts League of Community Health*
Mark Quirk, EdD	Vice President, Education Outcomes *American Medical Association*
Joan Stanley, PhD, CRNP, FAAN, FAANP	Senior Director of Education Policy *American Association of Colleges of Nursing*

1.8 Findings: Technical Expert Workgroup

The first in-person meeting of the TEW was held on Friday, May 30, 2014 at the U.S. HHS Hubert Humphrey Building, in Washington DC. A presentation of the environmental scan and lessons learned from the key informant interviews yielded the following insights from TEW members:

1.8.1 Including Materials that Require Fee or Payment in the Repository

- Most TEW members suggested including materials in the repository even if they require a fee, but adding a disclaimer to that effect.
- One TEW member suggested checking with the Institute for Healthcare Improvement (IH). They have a curriculum for patients with complex conditions that can be made available for 12 months, after paying a fee.

1.8.2 Where to House the Final Repository

- TEW members discussed the challenge in updating resources and keeping the Repository current.
- Several members offered to include a link to the Repository on their respective professional association/organization website.
- One TEW member suggested making the Repository available through libraries; universities could buy licenses and have their students and faculty access it through this mechanism.
- Suggested websites to house the Repository include OASH, the Center for Interprofessional Practice and Education, MedEdPortal, HRSA's Bureau of Health Workforce website.
- Most TEW members were less focused on where the Repository "lives," and more interested in the process for dissemination and potential use of the Repository.

1.8.3 Recommended Resources:

- One TEW member offered to send materials for the environmental scan. She also noted that the POGOe website has several materials in the multidisciplinary area and has major sources available for nursing.
- Other websites/resources to review include 1) Eldercare Workforce Alliance Website; 2) Kaiser's curriculum or other large health system curricula; 3) PACE training; and 4) IHI's Complex Care training.

1.8.4 Key Gaps in MCC Training and Curricula:

- Many TEW members agreed that there is a need for effective education and trainers. This needs to be done at the education AND practice levels. When students move into practice they do not have effective role models to follow in interprofessional care. When students move into practice they forget what they learned especially with regard to team based care.
- Others noted the need to strengthen patient outcomes and the where the best point of entry in the system is for training on MCC, in order to be more effective. What practices prevent this from sustaining?
- Other gaps in multiple chronic conditions training and curricula include:
  - Distinction between education and practice.
  - Offering a package of competencies and materials for faculty educators to use in developing their own curricula.
  - Understanding and teaching complexity, Behavior Change, and Shared Decision Making.
  - Eliciting patient and family goals.
  - Integrating social determinants into training on patients with MCC.
  - Emphasis on clinical experiences vs. textbook/didactic learning.
  - Preparing practitioners to practice in teams. It is easier to change staff development than to change the education system. Also a gap in understanding the return of investment for team care.

APPENDICES

APPENDIX A: ANNOTATED BIBLIOGRAPHY OF MCC-RELATED ARTICLES AND REPORTS

The following annotated bibliography lists selected publications relevant to multiple chronic conditions (MCC) curricula, education, and training modules. Specific domains and competencies central to education and care delivery for MCC populations are also addressed. Key curricula and domains were derived from examination of the literature (years 2003-2014) and interviews with technical experts. Articles were selected if they related to MCC, interprofessional education, and/or constructs and competencies related to MCC (e.g., team-based care, self-management, care coordination).

1) **Adam, P., Brandenburg, D. L., Bremer, K., & Nordstrom, D. L. (2010). Effects of team care of frequent attenders on patients and physicians. *Families, Systems, & Health, 28*(3), 247-257. Available at http://psycnet.apa.org/journals/fsh/28/3/247/.**

This article describes primary care team member's perceptions of team care using quantitative and qualitative methods. Medically complex patients with eight or more clinic visits throughout one year were non-randomly assigned to usual care or team care. Changes in patient health care use, well-being, and satisfaction from baseline to 6 months were compared between team care and usual care patients. Overall, the authors found that team care is feasible within a family medicine residency practice and may improve quality of care.

2) **Advisory Committee on Interdisciplinary, Community-Based Linkages. (2013). *Redesigning Health Professions Education and Practice to Prepare the Interprofessional Team to Care for Populations: Twelfth Annual Report to the Secretary of the United States Department of Health and Human Services and to the Congress*. Washington, DC: Health Resources and Services Administration. Available at http://www.hrsa.gov/advisorycommittees/bhpradvisory/acicbl/Reports/twelfthreport_.pdf**

This report outlines the importance of approaching health professional education and policy-making through interprofessional collaboration. Framing curricula and policy decisions using a population-based approach and optimizing use of available technologies is also emphasized. The rationale of each and step-by-step instructions for how to achieve these recommendations are included.

3) **Alford, C. L., Lawler, W., Talamantes, M. A., & Espino, D. V. (2002). A Geriatrics Curriculum for First Year Medical Students: Community Volunteers Become Senior Professors. *Gerontology & Geriatrics Education, 23*(1), 13-29. Available at http://www.tandfonline.com/doi/abs/10.1300/J021v23n01_02#.UpTuLieyIcs**

This article outlines the design, implementation, evaluation and subsequent revisions made to a geriatric continuity of care curriculum for first year medical students. The program addressed student's beliefs about physical decline, comfort with older patients, attitudes about career opportunities, and interest in geriatric research. Outcomes of the course included an increase in student interest in the physicians' role in treating the geriatric patient population.

4) **American Geriatrics Society Expert Panel on the Care of Older Adults with Multimorbidity. (2012). Patient-Centered Care for Older Adults with Multiple Chronic Conditions: A Stepwise Approach from the American Geriatrics Society. *Journal of the American Geriatrics Society, 60*(10), 1957–1968. Available at http://www.americangeriatrics.org/files/documents/MCC.stepwise.approach.pdf**

This article outlines guiding principles for the clinical management of care for older adults with multiple chronic conditions. Experts on the American Geriatric Society panel concluded that the five domains upon which clinicians should focus include; patient preferences, interpreting the evidence, prognosis, clinical feasibility, and optimizing therapies and care plans. Barriers to the implementation of each area are also discussed.

5) **Bajcar, J., Kennie, N., & Iglar, K. (2008). Teaching pharmacotherapeutics to family medicine residents-A curriculum. *Canadian Family Physician, 54*(4), 549-549. Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2294090/**

This article presents a curriculum to support the development of rational prescribing skills in family medicine residents. Ensuring that rational prescription techniques are used when caring for individuals with multiple chronic conditions is an overarching theme. The four main components of the curricula are: 1) a medication prescribing framework based on the main tasks and key decisions related to the prescribing of medications, 2) 12 pharmacotherapeutic topics identified by a needs

assessment, 3) a 5-step process for session design used by a curriculum development team, and 4) a description of specific roles of facilitators involved in delivering the curriculum.

6) **Bazaldua, O., Ables, A. Z., Dickerson, L. M., Hansen, L., Harris, I., Hoehns, J., ... Society of Teachers of Family Medicine Group on Pharmacotherapy. (2005). Suggested guidelines for pharmacotherapy curricula in family medicine residency training: recommendations from the Society of Teachers of Family Medicine Group on Pharmacotherapy. *Family medicine, 37*(2), 99. Available at http://www.ncbi.nlm.nih.gov/pubmed/15690249**

This article makes the case for pharmacotherapy training as an integral component of residency curricula. The authors suggest that pharmacotherapy training may lower the risk of incorrect medication management by health professionals. The resulting rational drug use would lower health care costs nationwide.

7) **Beaulieu, M. D., Samson, L., Rocher, G., Rioux, M., Boucher, L., & Del Grande, C. (2009). Investigating the barriers to teaching family physicians' and specialists' collaboration in the training environment: a qualitative study. *BMC medical education, 9*(1), 31. Available at http://www.biomedcentral.com/1472-6920/9/31**

This article analyzes how collaboration between family physicians and specialists is conceptualized in a residency training curricula in Canada. A multiple-case study based on Abbott's theory of professions was used. Collaboration with the following specialties was analyzed: general psychiatry, radiology and internal medicine. The authors concluded that increased awareness and action should be pursued in order to observe true collaboration between these fields.

8) **Bennett, C., Kennedy, S., & Donato, A.S. (2011). Preparing NPs for primary care: unraveling complexity with unfolding cases. *Journal of Nursing Education, 50*(6), 328-331. Available at http://www.healio.com/nursing/journals/jne/%7B6f5a826b-bfe4-4719-9be8-17bce24c5f28%7D/preparing-nps-for-primary-care-unraveling-complexity-with-unfolding-cases**

This article summarizes an online Behavioral Health Therapeutics course developed for a Doctor of Nursing Practice program. Components of the curricula reflect changes called for in the 2010 Carnegie report, "Summary of Educating Physicians: A Call for Reform of Medical School and Residency". Special highlights of the course include an unfolding case study using Backward Design,

Zull's model for engaging the brain, and grading criteria based on Dr. Christine Tanner's, "Case for Cases: A Pedagogy for Developing Habits of Thought".

9) **Boult, C., Green, A.F., Boult, L.B., Pacala, J.T., Snyder, C., & Leff, B. (2009). *Journal of the American Geriatrics Society, 57*(12), 2328–2337. Available at http://onlinelibrary.wiley.com/doi/10.1111/j.1532-5415.2009.02571.x/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false**

This article identified models of comprehensive health care that have shown the potential to improve the quality, efficiency, or health-related outcomes of care for chronically ill older persons (ages 65 and older) between the years 1987 and 2008. Fifteen models showed significant positive effects in at least one outcome. The areas of improvement include; primary care supplements, transitional care, acute care in patients' homes, nurse-physician teams for residents of nursing homes, and models of comprehensive care in hospitals.

10) **Boult, C., Reider, L., Leff, B., Frick, K.D., Boyd, C.M., Wolff, J.L., ... Scharfstein, D.O. (2011). The effect of guided care teams on the use of health services: results from a cluster-randomized controlled trial. *Archives of Internal Medicine, 171*(5), 460-466. Available at http://www.ncbi.nlm.nih.gov/pubmed/21403043**

This article evaluated the effect of guided care teams on the use of health services by older patients with multiple chronic conditions. The study included 850 older patients at high risk for using health care heavily in the future. Researchers concluded that guided care reduces the use of home health care, but has little effect on the use of other health services when implemented over a brief period of time.

11) **Boyd, C.M., Weiss, C.O., Halter, J., Han, K.C., Ershler, W.B., & Fried, L.P. (2007). Framework for evaluating disease severity measures in older adults with comorbidity. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences, 62*(3), 286-295. Available at http://www.ncbi.nlm.nih.gov/pubmed/17389726**

This article presents a framework for evaluating severity classification systems for common chronic diseases. The framework evaluates the: (a) goal or purpose of the classification system; (b) physiological and/or functional criteria for severity graduation; and (c) potential reliability and

validity of the system balanced against burden and costs associated with classification. Researchers concluded that most approaches to severity classification do not adequately address multiple chronic conditions.

12) Buring, S.M., Kirby, J & Conrad, W.F. (2007). A Structured Approach for Teaching Students to Counsel Self-care Patients. *American Journal of Pharmaceutical Education, 71*(1), Article 08. Available at http://www.ajpe.org/doi/abs/10.5688/aj710108?prevSearch=Multiple+Chronic+Conditions&searchHistoryKey=

This article analyses whether the use of a structured interviewing framework improved students' ability to treat self-care patients. To achieve this, pharmacy students were taught self-care through a series of 4 modules. In each module, students' content knowledge and application were assessed using quizzes and role-play scenarios, respectively. During the second module, a structured interview model (QuEST process) was presented by the instructor and students were tested on the same content and role-play used in module 1. Researchers concluded that QuEST process is an effective tool to teach students how to counsel patients with self-care issues.

13) Casey, D., & Mackreth, P. (2007). Developing education for long-term conditions management. *British Journal of Community Nursing, 12*(1), 19-22. Available at http://www.ncbi.nlm.nih.gov/pubmed/17353807

This article discusses the experience of one university in the development, implementation and evaluation of a modular program of study for nurses working with people with long-term conditions. It addresses the complexity of developing a curriculum in response to Department of Health initiatives and highlights the importance of interprofessional collaboration. The article includes the assessment used as well as a description of the learning and teaching strategies implemented.

14) Cheffins, T. E., Twomey, J. A., Grant, J. A., & Larkins, S. L. (2012). An evaluation of the self-management support capacity of providers of chronic condition primary care. *Australian Journal of Primary Health, 18*(2), 112-115. Available at http://www.ncbi.nlm.nih.gov/pubmed/22551832

This study aimed to ascertain whether self-management support (SMS) is being used in the primary care setting, and to identify barriers and enablers for SMS in practice. Health professionals who underwent SMS training were invited to participate in a semi-structured interview. Respondents reported being most likely to use SMART goals and decision balance. Core skills used included: problem solving, reflective listening, open-ended questions, identifying readiness to change and goal setting. Barriers to use of SMS and recommendations for increased use of these strategies are discussed.

15) Col, N., Bozzuto, L., Kirkegaard, P., Koelewijn-van Loon, M., Majeed, H., Jen Ng, C., & Pacheco-Huergo, V. (2011). Interprofessional education about shared decision making for patients in primary care settings. *Journal of interprofessional care, 25*(6), 409-415. Available at http://www.ncbi.nlm.nih.gov/pubmed/22011026

This article proposes a framework for interprofessional education about shared decision making (SDM) targeted to primary care settings. Five areas of knowledge and skills in interprofessional education and SDM were agreed to be essential for all relevant stakeholders to be successful: understanding the concept of SDM; acquiring relevant communication skills to facilitate SDM; understanding interprofessional sensitivities; understanding the roles of different professions within the relevant primary care group; and acquiring relevant skills to implement SDM. Recommendations around a series of teaching methods for the aforementioned areas, using principles from adult learning are addressed.

16) Corbridge, S. J., Corbridge, T., Tiffen, J., & Carlucci, M. (2013). Implementing Team-Based Learning in a Nurse Practitioner Curriculum. *Nurse Educator, 38*(5), 202-205. Available at http://www.ncbi.nlm.nih.gov/pubmed/23969749

This article provides an overview of Team-based learning (TBL). TBL is an innovative, learner-centered teaching strategy that promotes active learning. The authors describe their

experience with implementing TBL in an adult-gerontology acute and primary care course for nurse practitioners as well as their evaluation of student outcomes.

17) **Darer, J.D., Hwang, W., Pham, H.H., Bass, E.B., & Anderson, G. (2004). More Training Needed in Chronic Care: A Survey of U.S. Physicians.** ***Academic Medicine, 79*****(6), 541-548. Available at http://journals.lww.com/academicmedicine/Abstract/2004/06000/More_Training_Needed_in_Chronic_Care__A_Survey_of.9.aspx**

The authors evaluated physicians' perceptions of the adequacy of their chronic illness care training and the effects of this on their attitudes toward care of persons with chronic conditions. The interview instrument examined demographics, career satisfaction, practice characteristics, and perceived adequacy of chronic illness care training in ten competencies (geriatric syndromes, chronic pain, nutrition, developmental milestones, end-of-life care, psychosocial issues, patient education, assessment of caregiver needs, coordination of services, and interdisciplinary teamwork), and effect of training on attitudes toward chronic illness care. The authors concluded that physicians perceived their medical training for chronic illness care as inadequate.

18) **Department of Vermont Health Access. (2011).** ***Vermont Blueprint for Health 2010 Annual Report.*** **Williston, VT. Available at http://hcr.vermont.gov/sites/hcr/files/final_annual_report_01_26_11.pdf**

This report outlines the development of Vermont Blueprint for Health, Vermont's cutting edge health reform program and public-private partnership. Vermont's participation in the Centers for Medicare & Medicaid Services' Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration Project is highlighted, along with milestones achieved in expanding access to Blueprint Integrated Health Services (IHS). IHS is a model that includes Advanced Primary Care Practices (APCPs) with recognition as patient-centered homes (PCMHs) and community health teams (CHTs) supported by multi-insurer payment reforms. Evaluation and early program impact data are also discussed.

19) Deutschlander, S., & Sute, E. (2011). *Interprofessional Mentoring Guide for Supervisors, Staff and Students*. Calgary, Alberta, Canada: Alberta Health Services. Available at http://www.integration.samhsa.gov/workforce/wduf-stu-sp-ip-mentoring-guide.pdf

This guide serves as a tool for healthcare professionals and students to support interprofessional practice education for students inthe workplace setting. Topics covered include interprofessional mentoring; an overview of the Canadian National Interprofessional (IP) Competency Framework; facilitation methods; best practices for supervisors; evaluation techniques; and recommendations for further reading material. Modules for use in a professional setting are included for each topic area.

20) Dorr, D.A., Wilcox, A., Burns, L., Brunker, C.P., Narus, S.P., & Clayton, P.D. (2006). Implementing a Multidisease Chronic Care Model in Primary Care Using People and Technology. *Disease Management, 9*(1), 1-15. Available at http://online.liebertpub.com/doi/abs/10.1089/dis.2006.9.1

This article outlines a generalist model, the Intermountain Healthcare (Intermountain) approach, of chronic disease management to overcome the limitations associated with specialization. In the Intermountain approach, which reflects elements of the Chronic Care Model (CCM), care managers located within multipayer primary care clinics collaborate with physicians, patients, and other members of a primary care team to improve patient outcomes for a variety of conditions. An important part of the intervention is widespread use of an electronic health record (EHR). Early results from the application of this model show improved patient outcomes and improved physician productivity. Success factors, challenges, and obstacles in implementing the model are discussed.

21) Douglass, M. A., Casale, J. P., Skirvin, J. A., & DiVall, M. V. (2013).A Virtual Patient Software Program to Improve Pharmacy Student Learning in a Comprehensive Disease Management Course. *American journal of pharmaceutical education, 77*(8). Available at http://www.ajpe.org/doi/abs/10.5688/ajpe778172?prevSearch=multiple+chronic+conditions+AND+curriculum&searchHistoryKey=

This article assesses the impact of a virtual patient pilot program on pharmacy students' clinical competence skills. Pharmacy students completed interactive software-based patient case scenarios embedded with drug-therapy problems as part of a course requirement at the end of their third year. Assessments included drug-therapy problem competency achievement, performance on a pretest and

posttest, and pilot evaluation survey instrument. The program summarized the course series and significant improvements in students' posttest scores demonstrated advancement of clinical skills involving drug-therapy problem solving. Students agreed that completing the pilot program improved their chronic disease management skills.

22) Dounis, G., Ditmyer, M., VanBeuge, S., Schuerman, S., McClain, M., ... Mobley, C. (2014). Interprofessional faculty development: integration of oral health into the geriatric diabetes curriculum, from theory to practice. *Journal of Multidisciplinary Healthcare, 7*, 1–9. Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3862736/

This article analyzes the effectiveness of an interprofessional health care faculty training program. A statewide comprehensive type 2 diabetes training program was developed and offered to multidisciplinary health care faculty using innovative educational methods. Video-recorded clinically simulated patient encounters concentrated on the oral–systemic interactions between type 2 diabetes and multiple chronic conditions. Post-encounter, instructors facilitated debriefing focused on preconceptions, self-assessment, and peer discussions to develop a joint interprofessional care plan. Overall, attitude, knowledge, and perceptions of health care faculty regarding interprofessional team building and the team approach to management of the oral-systemic manifestations of chronic disease in older adults improved.

23) Durso, S. C. (2005). Interaction with other health team members in caring for elderly patients. *Dental Clinics of North America, 49*(2), 377-388. Available at http://www.ncbi.nlm.nih.gov/pubmed/15755411

This article discusses detailed methods for interprofessional collaboration in caring for elderly patients. Topics highlighted include the importance of communication and consultation as appropriate to ensure safe and effective care. The article is useful for healthcare practitioners working with older patients, especially those with multiple chronic conditions.

24) Dyer, C.B., Hyer, K., Feldt, K.S., Lindemann, D.A., Busby-Whitehead, J., Greenberg, S., … Flaherty, E. (2003). Frail Older Patient Care by Interdisciplinary Teams: A Primer for Generalists. *Gerontology & Geriatrics Education, 24*(2), 51-62. Available at http://www.ncbi.nlm.nih.gov/pubmed/?term=Frail+Older+Patient+Care+by+Interdisciplinary+Teams%3A+A+Primer+for+Generalists

This article describes the roles of participating team members in the context of interdisciplinary care for older adults. Examples from existing Geriatric Interdisciplinary (ID) Teams are outlined. Interprofessional collaboration and special approaches to older adults with multiple chronic conditions are also discussed, along with challenges to working in these teams.

25) Eldercare Workforce Alliance. (2011). *Education & Training: Meeting the Needs of Older Adults*. Washington, DC. Available at http://www.eldercareworkforce.org/files/EWA_Issue.WrkfrcTraining.final.pdf

This Brief outlines education and training needs for health care professionals caring for older adults. Challenges around expanding geriatric education for health care professionals, training needs for direct-care workers and policy recommendations are outlined. A call to action and an emphasis on findings by the Institute of Medicine are included.

26) Friedman, A., Hahn, K.A., Etz, R., Rehwinkel-Morfe, A.M., Miller, W.L., Nutting, P.A., Crabtree, B.F. (2014). A Typology of Primary Care Workforce Innovations in the United States Since 2000. *Medical Care, 52*(2), 101-111. Available at http://www.ncbi.nlm.nih.gov/pubmed/24374421

This report analyzes existing workforce models used by primary care practices to develop a typology to be modeled. Researchers found that many workforce innovations added personnel to existing practices, whereas others sought to retrain existing personnel or even develop roles outside the traditional practice. The analysis identified 5 key workforce innovation concepts through the literature: team care, population focus, additional resource support, creating workforce connections, and role change.

27) Gray-Miceli, D., Mezey, M. (2007). *Critical Thinking Related to Complex Care of Older Adults*. Lexington, KY: National Gerontological Nursing Association. Available at http://hartfordign.org/uploads/File/gnec_state_of_science_papers/gnec_critical_thinking.pdf

This article outlines five recommendations for nursing care of older adults with multiple chronic conditions. These recommendations suggest that the use of advanced health planning, an increased vigilance around drug interactions, an increased surveillance around functional and cognitive status, and the use of hospital system-based models of care, amongst other factors, should be used in planning nursing care. Encouragement toward a shift in the nursing process and plans of care which earmark interventions directed at the primary and secondary prevention of frailty, functional decline and geriatric syndromes is the overarching theme of the article. The researchers emphasized the importance of reducing the burden of these healthcare problems through individualized and team assessments of older adults.

28) Gunderson, E.W., Coffin, P.O., Chang, N., Polydorou, S., & Levin, F.R. (2009). The interface between substance abuse and chronic pain management in primary care: a curriculum for medical residents. *Substance Abuse, 30*(3), 253-260. Available at http://www.ncbi.nlm.nih.gov/pubmed/19591063

This article describes a curriculum designed to instruct second year medical residents to recognize prescription opioid and other substance abuse among patients with chronic noncancer pain (CNCP). The two-hour, case-based curriculum delivered to small groups of medical residents sought to improve assessment and management of opioid-treated CNCP patients, including those with a substance use disorder. A two-page pre-post survey was administered to assess self-efficacy change. The brief curriculum was well received and appears effective.

29) Haas, S., Swan, B. A., & Haynes, T. (2013). Developing ambulatory care registered nurse competencies for care coordination and transition management. *Nurse Economics, 31*(1), 44-9, 43. Available at http://www.ncbi.nlm.nih.gov/pubmed/23505750

This article outlines a care coordination competencies action plan with three phases to delineate registered nurse (RN) competencies and develop an education program for care coordination and

transition management in ambulatory care. Activities linked to each competency and a table of dimensions, activities, and competencies (including knowledge, skills, attitudes) for ambulatory care RN care coordination and transition management are included.

30) **American College of Clinical Pharmacy, Hume, A.L., Kirwin, J., Bieber, H.L., Hall, D.L., Kennedy, A.K., ... Wiggins, B. (2012). Improving care transitions: current practice and future opportunities for pharmacist. *Pharmacotherapy, 32*(11), e326-327. Available at http://www.ncbi.nlm.nih.gov/pubmed/23108810**

This article describes the roles and responsibilities of pharmacists in ensuring optimal outcomes from drug therapy during care transitions. Barriers to effective care transitions including inadequate communication, poor care coordination, and the lack of one clinician ultimately responsible for these transitions, are discussed. The article also identifies specific patient populations at high risk of ADEs during care transitions. Several national initiatives and newer care transition models are discussed, including multi- and interdisciplinary programs with pharmacists as key members. The article concludes with a discussion about the importance of recognizing and addressing health literacy issues to promote patient empowerment during and after care transitions.

31) **Heflin, M.T., Bragg, E.J., Fernandez, H., Christmas, C., Osterweil, D., Sauvigné, K.,Durso, S.C. (2012). The Donald W. Reynolds Consortium for Faculty Development to Advance Geriatrics Education (FD~AGE): a model for dissemination of subspecialty educational expertise. *Academic Medicine, 87*(5), 618-626. Available at http://www.ncbi.nlm.nih.gov/pubmed/22450185**

This article measures the impact of the varying educational components of the Donald W. Reynolds Foundation Faculty Development to Advance Geriatrics Education (FD~AGE) program. Measurements evaluated the impact of the three instructional activities of the program: advanced fellowships in clinical education for geriatricians who have completed clinical training; mini-fellowships and intensive courses for faculty in geriatrics, teaching skills, and curriculum development; and on-site consultations to assist institutions with reviewing and redesigning geriatrics education programs. The authors concluded that the FD~AGE program represents a unique model for

extending concentrated expertise in geriatrics education to a broad group of faculty and institutions to accelerate progress in training future physicians.

32) **Institute of Medicine. (2014).** ***Assessing Health Professional Education-Workshop Summary, Patricia A. Cuff*****. Washington, DC: National Academies Press. Available at http://iom.edu/Reports/2014/Assessing-Health-Professional-Education.aspx?utm_medium=etmail&utm_source=Institute%20of%20Medicine&utm_campaign=04.30.14+New+Reports&utm_content=&utm_term**

This report summarizes the Institute of Medicine (IOM) Global Forum on Innovation in Health Professional Education workshop to explore the challenges, opportunities, and innovations in assessment across the education-to-practice continuum. The workshop was held on October 9-10, 2013. Issues such as assessment of learners and educators of Interprofessional education and team-based care are outlined.

33) **Josiah Macy Jr. Foundation. (2013).** ***Interprofessional Care Coordination: Looking to the Future*****. New York, NY: New York Academy of Medicine. Available at http://macyfoundation.org/docs/grantee_pubs/NYAM_Issue_Brief-Care_Coordination.pdf**

This Brief describes twelve recommendations around developing a blueprint for interprofessional care coordination practice and clinical education within emerging health care delivery systems. The Brief outlines the two phases of the New York Academy of Medicine Initiative on Interprofessional Care Coordination. This Brief is their final product, a detailed description of the twelve recommended critical elements of a blueprint for policy makers and educators to implement evidence-based, interprofessional care coordination models and to integrate interprofessional care coordination principles and training experiences into health professions education.

34) **Just, J. M., Schulz, C., Bongartz, M., & Schnell, M. W. (2010). Palliative care for the elderly-developing a curriculum for nursing and medical students.** ***BMC geriatrics, 10*****(1), 66. Available at http://www.ncbi.nlm.nih.gov/pubmed/20854665**

This article describes an interdisciplinary curriculum focusing on the palliative care needs of the elderly. The curriculum uses four deduction domains: Geriatrics, Palliative Care, Communication & Patient Autonomy and Organization & Social Networks. The curriculum was successfully

implemented following the steps outlined in the book, *Curriculum Development for Medical Education: A Six-Step Approach* by Dr. David E. Kern, MD, MPH.

35) Kennedy, B.I., Kennedy, W.C., & Southard, D.R. (2008). A Medical Education Model for Collaborative Chronic Disease Management. *Journal of Physician Assistant Education, 19*(2), 18-29. Available at http://www.paeaonline.org/index.php?ht=action/GetDocumentAction/i/60828

This article analyzes the impact of a curriculum enhancement project on physician assistant (PA) students' abilities, attitudes, and preparedness to provide collaborative disease management. The authors identified competencies needed for collaborative chronic disease management and developed curriculum interventions. Researchers found that while curriculum enhancement may not significantly improve attitudes, the study suggests that interventions may be supportive of already favorable attitudes.

36) Klitzner, T. S., Rabbitt, L. A., & Chang, R. K. R. (2010). Benefits of care coordination for children with complex disease: a pilot medical home project in a resident teaching clinic. *The Journal of Pediatrics, 156*(6), 1006-1010. Available at http://www.ncbi.nlm.nih.gov/pubmed/20223482

This article summarizes the integration of comprehensive care coordination for children with complex diseases in a resident education clinic by analyzing alterations in medical resource use. The project was designed to include four basic elements: 1) 60-minute intake appointment; 2) follow-up appointments twice the length of a standard visit; 3) access to a "family liaison"; and 4) a family notebook ("All about Me" binder). Researchers found that incorporating a program of care coordination according to the principles of the medical home into an outpatient pediatric residency teaching clinic may not only serve as a training vehicle for pediatric residents, but also create favorable alterations in medical resource use.

37) Körner, M., Ehrhardt, H., & Steger, A. K. (2013). Designing an interprofessional training program for shared decision making. *Journal of Interprofessional Care, 27*(2), 146-154. Available at http://www.ncbi.nlm.nih.gov/pubmed/23151149

This article identifies the preferences of patients and health care professionals concerning internal and external participation in rehabilitation clinics, in order to develop an interprofessional shared decision-making (SDM) training program for health care professionals to enhance both types of participation. The study consists of two parts: focus groups with patients and a survey of experts (senior health care professionals from medicine, psychotherapy, physical therapy and nursing). The results of these assessments have been used to develop an interprofessional SDM training program for implementing internal and external participation in interprofessional teams in medical rehabilitation.

38) Kullgren, J., Radhakrishnan, R., Unni, E. & Hanson, E. (2013). An Integrated Course in Pain Management and Palliative Care Bridging the Basic Sciences and Pharmacy Practice. *American Journal of Pharmaceutical Education, 77*(6), Article 121. Available at http://www.ajpe.org/doi/abs/10.5688/ajpe776121?prevSearch=Multiple+Chronic+Conditions&searchHistoryKey=

This article describes the development of an integrated pain and palliative care course and investigates the long-term effectiveness of the course during doctor of pharmacy (PharmD) students' advanced pharmacy practice experiences (APPEs) and in their practice after graduation.

The course is a three-week elective course in pain and palliative care developed by integrating relevant clinical and pharmaceutical sciences. Instructional strategies included lectures, team and individual activities, case studies, and student presentations. Researchers found that integrating basic and clinical sciences in therapeutic courses is an effective learning strategy.

39) Lipson, D., Rich., E., Libersky, J., & Parchman, M. (2011). *Ensuring That Patient-Centered Medical Homes Effectively Serve Patients With Complex Health Needs.* (Prepared by Mathematica Policy Research under Contract No. HHSA290200900019I TO 2.) AHRQ Publication No. 11-0109. Rockville, MD: Agency for Healthcare Research and Quality. Available at http://www.pcmh.ahrq.gov/sites/default/files/attachments/Ensuring%20PCMHs%20Serve%20Pts%20with%20Complex%20Health%20Needs.pdf

This brief answers the question, "How can decision makers help smaller primary care practices become effective patient-centered medical homes (PCMHs) for patients with complex health care needs, such as the frail elderly and people with disabilities?" A detailed description of PCMHs is outlined. Recommendations around payment reform, coordinating care, and supporting additional research are also included.

40) Lown, B. A., Kryworuchko, J., Bieber, C., Lillie, D. M., Kelly, C., Berger, B., & Loh, A. (2011). Continuing professional development for interprofessional teams supporting patients in healthcare decision making. *Journal of interprofessional care, 25*(6), 401-408. Available at http://www.ncbi.nlm.nih.gov/pubmed/21657852

This article describes a model that can be used to design, implement, and evaluate continuing education curricula in interprofessional shared decision making and decision support. This model aligns curricular goals, objectives, educational strategies, and evaluation instruments and strategies with desired learning and organizational outcomes. Educational leaders and researchers can institutionalize such curricula by linking them with quality improvement and patient safety initiatives.

41) Lynn, L.A., Hess, B.J., Conforti, L.N., Lipner, R.S., & Holmboe, E.S. (2009). Clinic systems and the quality of care for older adults in residency clinics and in physician practices. *Academic Medicine, 84*(12), 1732-40. Available at http://www.ncbi.nlm.nih.gov/pubmed/19940582

This article examines the quality of care for older adults in residency clinics and physician practices. Characteristics of the practice systems in the clinics and offices and the relationship between specific elements of practice systems and the quality of care were studied. Researchers concluded that practice system elements designed to support care for older adults perform differently in residency clinics than

in practicing physicians' offices. Significant gaps in the quality of care for older adults exist and are much more pronounced in the residency clinic setting.

42) Marsteller, J. A., Hsu, Y. J., Reider, L., Frey, K., Wolff, J., Boyd, C., Boult, C. (2010). Physician Satisfaction with Chronic Care Processes: A Cluster-Randomized Trial of Guided Care. *The Annals of Family Medicine, 8*(4), 308-315. Available at http://www.ncbi.nlm.nih.gov/pubmed/20644185

This article evaluates the effect of the Guided Care model on primary care physicians' impressions of processes of care for chronically ill older patients. Physicians' satisfaction with chronic care processes, time spent on chronic care, knowledge of their chronically ill older patients, and care coordination provided by physicians and office staff was measured. Researchers found that, based on physician report, Guided Care provides important benefits to physicians by improving communication with chronically ill older patients and their families and in physicians' knowledge of their patients' clinical conditions.

43) McSpadden, C., Therrien, M., & McEwen, I. R. (2012). Care Coordination for Children With Special Health Care Needs and Roles for Physical Therapists. *Pediatric Physical Therapy, 24*(1), 70-77. Available at http://www.ncbi.nlm.nih.gov/pubmed/22207474

This article summarizes the research on the possible benefits of care coordination for children with special health care needs and explores potential roles for physical therapists in care coordination, including roles as primary care coordinators, members of interprofessional teams, advocates, and researchers. The article also outlines the medical home model and its benefits. The barriers to care coordination are reviewed and recommendations to reduce barriers and better prepare therapists for care coordination are offered.

44) Mitchell, P., Wynia, M., Golden, R., McNellis, B., Okun, S., Webb, C.E., Rohrbach, V. & Von Kohorn, I. (2012). *Core principles & values of effective team-based health care*. Discussion Paper, Institute of Medicine, Washington, DC. Available at http://www.iom.edu/~/media/Files/Perspectives-Files/2012/Discussion-Papers/VSRT-Team-Based-Care-Principles-Values.pdf

This paper describes a set of core principles, the purpose of which is to help enable health professionals, researchers, policy makers, administrators, and patients to achieve appropriate,

high-value team-based health care. Core principles of effective team-based health care and examples of best practices are highlighted. The paper concludes with a recommended research agenda to advance the state of effective team-based health care.

45) Morrow, C. E., Reed, V. A., Eliassen, M. S., & Imset, I. (2011). Skill Acquisition for Year III Medical Students. *Family medicine, 43*(10), 721-5. Available at http://www.stfm.org/fmhub/fm2011/November/Cathleen721.pdf

This article outlines an integrated curriculum on shared decision-making (SDM) in the third year Family Medicine Clerkship at Dartmouth Medical School. The curriculum consisted of a mix of experiential, classroom, and online experiences designed to provide students with opportunities to learn content, practice skills, and share observations from their preceptorships. Researchers concluded that there exist many benefits and challenges in attempting to teach sophisticated communication and decision-making precepts to medical students who are working to master fundamentals of clinical work and who may or may not see such precepts reinforced in practice.

46) Nasca, T.J., Weiss, K.B., & Bagian, J.P. (2014). Improving Clinical Learning Environments for Tomorrow's Physicians. *New England Journal of Medicine*, (370), 991-993. Available at http://www.nejm.org/doi/full/10.1056/NEJMp1314628

This article describes the rationale and development of the "Clinical Learning Environment Review (CLER)" program. An overview of the "CLER Pathways to Excellence" document is also given. This document serves as a guide to graduate medical education (GME) teaching institutions, providing ways to improve training in the six areas evaluated by the CLER program, and help to create environments that support the development of competence. The Pathways document will be the basis of the CLER formative assessment process, and it will serve as the framework for providing periodic reports on national performance in GME programs on patient safety and quality improvement.

47) National Council on Patient Information and Education. (2013). *Accelerating Progress in Prescription Medicine Adherence: The Adherence Action Agenda, A National Action Plan to Address America's "Other Drug Problem"*. Rockville, MD. Available at http://www.bemedicinesmart.org/A3_Report.pdf

This report outlines the findings of the National Council on Patient Information and Educations' (CPIE) *Adherence Action Agenda*, or the "A3 Project". This project brought together 22 professional societies and voluntary health organizations, government agencies and industry leaders to review the state of prescription adherence today and to identify the major challenges for the future. The report provides a detailed look at multiple chronic conditions as they relate to prescription adherence, along with guidance for improving adherence in the future.

48) Nieman, L.Z., & Cheng, L. (2011). Chronic Illness Needs Educated Doctors: An Innovative Primary Care Training Program for Chronic Illness Education. *Medical Teacher, 33*(6), e340-348. Available at http://www.ncbi.nlm.nih.gov/pubmed/21609171

This article evaluates the effectiveness of a chronic illness training program, Chronic Illness Needs Educated Doctors (CINED). Four instructional components were administered and assessed using an objective standardized clinical exercise (OSCE): (1) measurements of the health-related quality of life of patients with chronic illnesses; (2) didactic sessions in which they described chronically ill patients and their care; (3) written narratives describing the trainees' reactions for these patients; and (4) portfolios offering evidence of chronic illness learning. Researchers concluded that CINED is an effective curriculum for promoting chronic illness learning among trainees.

49) Oeseburg, B., Hilberts, R., Luten, T. A., van Etten, A. V., Slaets, J. P., & Roodbol, P. F. (2013). Interprofessional education in primary care for the elderly: a pilot study. *BMC Medical Education, 13*(1), 161. Available at http://www.biomedcentral.com/1472-6920/13/161

This article analyses an interprofessional education (IPE) program for general practitioners (GPs) and practice nurses and evaluates the feasibility of an IPE program for professionals with different educational backgrounds and its effect on the division of professionals' tasks and responsibilities. During the program, tasks and responsibilities, in particular those related to the care plan, shifted

from GP to practice nurse. Researchers found that an interprofessional education program for professionals with different educational backgrounds (GPs and practice nurses) is feasible and has an added value to the redefining of tasks and responsibilities among GPs and practice nurses.

50) Osterkamp, E.M., Costanzo, A.J., Ehrhardt, B.S., & Gormley, D.K. (2013). Transition of Care for Adolescent Patients with Chronic Illness: Education for Nurses. *Journal of Continuing Education in Nursing, 44*(1), 38-42. Available at http://www.ncbi.nlm.nih.gov/pubmed/23413447

This article describes the development of an educational program for nurses who care for chronically ill young adult patients who are transitioning to adult care.

51) Paget, L., Han, P., Nedza, S., Kurtz, P., Racine, E., Russell, S.,.Von Kohorn, I. (2011). *Patient-Clinician Communication: Basic Principles and Expectations.* Discussion Paper, Institute of Medicine, Washington, DC. Available at http://iom.edu/~/media/Files/Perspectives-Files/2012/Discussion-Papers/VSRT-Patient%20Clinician.pdf

This paper outlines a detailed approach to patient-clinician communication. The components were developed by the Best Practices and Evidence Communication Innovation Collaboratives of the Institute of Medicine (IOM) Roundtable on Value & Science-Driven Health Care. Collaborative participants intended these principles and expectations to serve as common touchstone reference points for both patients and clinicians, as they and their related organizations seek to foster the partnership and patient engagement necessary to improve health outcomes and value from care delivered.

52) Pols, R. G., Battersby, M. W., Regan-Smith, M., Markwick, M. J., Lawrence, J., Auret, K., ... Nguyen, H. (2009). Chronic condition self-management support: proposed competencies for medical students. *Chronic Illness, 5*(1), 7-14. Available at http://www.ncbi.nlm.nih.gov/pubmed/19276220

This article outlines curriculum content in chronic condition management (CCM) and chronic condition self-management (CCSM). Components of the curriculum include: consideration to the changing nature of medical practice and that as part of this; doctors of the future will need skills in team participation, continuity of care, self-management support and patient-centered collaborative

care planning. Additional considerations are recommended for skills needed to assist patients to better adhere to medical management, lifestyle behavior change and risk factor reduction, if optimal health outcomes are to be achieved and costs are to be contained.

53) Poncelet, A., Bokser, S., Calton, B., Hauer, K.E., Kirsch, H., Jones, T., Wamsley, M & Robertson, P. (2011). Development of a longitudinal integrated clerkship at an academic medical center. *Medical Education Online, 16*. Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3071870/

This article highlights the components of an effective longitudinal integrated clerkship developed and implemented by a tertiary care academic medical center. Principles of the clerkship include; continuity with faculty preceptors, patients and peers, a developmentally progressive curriculum with emphasis on interdisciplinary teaching, and exposure to undiagnosed illness in acute and chronic care settings. Graduates of the clerkship performed slightly higher than traditional peers on standardized patient examinations.

54) Ramaswamy, R. (2013). How to Teach Medication Management: A Review of Novel Educational Materials in Geriatrics. *Journal of the American Geriatrics Society, 61*(9), 1598-1601. http://www.ncbi.nlm.nih.gov/pubmed/23888871

This article outlines 26 minimum geriatrics competencies within eight domains for graduating medical students put forth by the Association of American Medical Colleges. The Portal of Geriatric Online education (www.POGOe.org) is an online public repository of geriatrics educational materials and modules developed by geriatrics educators and academicians in the United States, freely available for use by educators and learners in the field. The three POGOe materials presented in this review showcase pearls of medication management for medical and other professional students in novel learning formats that can be administered without major prior preparation. The review compares and contrasts the three materials in descriptive and tabular formats to enable its appropriate use by educators in promoting self-learning or group learning among their learners.

55) Rich, E., Lipson, D., Libersky, J., & Parchman, M. (2012). *White Paper*. (Prepared by Mathematica Policy Research under Contract No. HHSA290200900019I/ HHSA29032005T). AHRQ Publication No. 12-0010-EF. Rockville, MD: Agency for Healthcare Research and Quality. Available at http://www.pcmh.ahrq.gov/sites/default/files/attachments/Coordinating%20Care%20for%20Adults%20with%20Complex%20Care%20Needs.pdf

This paper explores the current landscape of patient-centered medical home (PCMH) services for patients with complex needs, details five programs that have addressed the challenges of caring for these patients, and offers programmatic and policy changes that can help smaller practices better deliver services to all patients, including those with the most complex health needs.

56) Ritchie, L. (2012). Integration of chronic illness care into a primary healthcare focused nursing curriculum. *Nurse Educator, 37*(1), 23-24. Available at http://www.ncbi.nlm.nih.gov/pubmed/22157999

This article highlights one nursing program's third year baccalaureate chronic illness courses that were developed within a primary healthcare framework.

57) Rowan, N. L., Gillette, P. D., Faul, A. C., Yankeelov, P. A., Borders, K. W., Deck, S., Wiegand, M. (2009). Innovative interdisciplinary training in and delivery of evidence-based geriatric services: Creating a bridge with social work and physical therapy. *Gerontology & Geriatrics Education, 30*(3), 187-204. Available at http://www.ncbi.nlm.nih.gov/pubmed/19697183

This article outlines an evidence-based geriatric assessment and brief intervention research, training, and service project for community-dwelling older adults with a focus on interdisciplinary education models, social work and physical therapy. This article describes the process of implementing this innovative multipartner project, the obstacles faced, and lessons learned. Adult learning theory and social cognitive theory served to underpin the project. The objectives were achieved and evaluation noted many positive experiences in training and service delivery.

58) Sampalli, T., Fox, R.A., Dickson, R., & Fox, J. (2012). Proposed model of integrated care to improve health outcomes for individuals with multimorbidities. *Journal of Patient Preference and Adherence, 6*, 757-64. Available at http://www.ncbi.nlm.nih.gov/pubmed/23118532

This article outlines the components of an integrated model of care that routinely treats individuals with multiple chronic conditions. This care model is designed to address the specific needs of this complex patient population, with integrated and coordinated care modules that meet the needs of the person versus the disease. The results of a pilot evaluation of this care model are also discussed.

59) Schlaudecker, J. D., Lewis, T. J., Moore, I., Pallerla, H., Stecher, A. M., Wiebracht, N. D., & Warshaw, G. A. (2013). Teaching Resident Physicians Chronic Disease Management: Simulating a 10-Year Longitudinal Clinical Experience With a Standardized Dementia Patient and Caregiver. *Journal of graduate medical education, 5*(3), 468-475. Available at http://www.jgme.org/doi/abs/10.4300/JGME-D-12-00247.1

This article describes the development, implementation, and evaluation of a chronic disease/geriatric medicine curriculum designed to teach Accreditation Council for Graduate Medical Education core competencies and geriatric medicine competencies to residents by using longitudinal encounters with a standardized dementia patient and her caregiver daughter. Residents found this standardized patient (SP)-based curriculum realistic and valuable. Residents improved in both self-perceived knowledge of dementia and the use of patient-centered language and professionalism.

60) Shea, J., Grossman, S., Wallace, M., & Lange, J. (2010). Assessment of advanced practice palliative care nursing competencies in nurse practitioner students: implications for the integration of ELNEC curricular modules. *Journal of Nursing Education, 49(*4), 183-139. Available at http://www.ncbi.nlm.nih.gov/pubmed/19954137

This article describes a mixed-method formative assessment of 36 graduate nursing students' knowledge about and attitudes toward palliative care preliminary to curricular integration of the End-of-Life Nursing Education Consortium (ELNEC) graduate core modules. Students' knowledge about palliative care was assessed using the 106-item ELNEC examination. In addition, qualitative data were gathered regarding students' definitions of palliative care, the role of the advanced practice nurse (APRN) in palliative care, and their definitions of a "good" and "bad" death. Results revealed

students' limited knowledge about palliative care. Implications for curriculum design, advanced practice role development, and collaboration with community health partners are discussed.

61) Shrader, S. & Griggs, C. (2014). Multiple Interprofessional Education Activities Delivered Longitudinally Within a Required Clinical Assessment Course. ***American Journal of Pharmaceutical Education, 78*****(1), Article 14. Available at http://www.ajpe.org/doi/full/10.5688/ajpe78114**

This article outlines the implementation and assessment of the effects of delivering multiple interprofessional educational (IPE) activities as a longitudinal curriculum within a required clinical assessment on pharmacy students' perceptions regarding interprofessional collaboration. Nine separate IPE activities were embedded into the course longitudinally over the semester using various active-learning strategies and simulated patients. The IPE activities required student participation from medical, nursing, and physician assistant students. Students were assessed using the Interdisciplinary Education Perception Scale (IEPS). Researchers found that incorporating multiple IPE activities longitudinally into a required clinical assessment course significantly changed pharmacy students' perceptions of interprofessional collaboration.

62) Silver, I. L., & Leslie, K. (2009). Faculty development for continuing interprofessional education and collaborative practice. ***Journal of Continuing Education in the Health Professions, 29*****(3), 172-177. Available at http://onlinelibrary.wiley.com /doi/10.1002/chp.20032/abstract**

This article proposes a framework for faculty development in continuing interprofessional education (CIPE) and collaborative practice. The framework was built on best practices in faculty development and CIPE. It was informed by local experience in the development, delivery, and evaluation of a faculty development program to promote capacity for dissemination of concepts relating to interprofessional education (IPE) and interprofessional collaboration (IPC) in health care environments. Researchers found that strategic planning, including the application of a systems approach, attention to the principles of effective learning, and an outcomes-based curriculum design

are recommended for the development of continuing IPE faculty development programs that enhance interprofessional collaboration.

63) Slonim, A., Wheeler, F.C., Quinlan, K.M., & Smith, S.M. (2010). Designing Competencies for Chronic Disease Practice. *Preventing Chronic Disease, 7*(2),A44. Available at http://www.ncbi.nlm.nih.gov/pubmed/20158972

This article discusses the findings of a group of stakeholders engaged by the National Association of Chronic Disease Directors (NACDD) in developing competencies for chronic disease practice. The final product presents an integrated graphic that highlights interrelationships among the specific skills and knowledge required for leading and managing state chronic disease programs. Those competencies fall into 7 clusters: 1) lead strategically, 2) manage people, 3) manage programs and resources, 4) design and evaluate programs, 5) use public health science, 6) influence policies and systems change, and 7) build support. Researchers suggest the use of these competencies by those caring for individuals with chronic disease issues.

64) The Annapolis Coalition on the Behavioral Health Workforce on behalf of the Center for Integrated Health Solutions. (n.d.). *Primary and Behavioral Healthcare Integration-Guiding Principles for Workforce Development*. Cincinnati, OH: Author. Available at http://www.integration.samhsa.gov/workforce/Guiding_Principles_for_Workforce_Development.pdf

This report discusses existing barriers to the promotion of integrated delivery of behavioral health services with other forms of healthcare. Recommendations for overcoming these barriers are discussed as part of a larger set of goals listed to meet the seven core strategic goals identified in the SAMHSA-sponsored Action Plan on Behavioral Health Workforce Development.

65) Towle, A., & Godolphin, W. (2011). The neglect of chronic disease self-management in medical education: involving patients as educators. *Academic Medicine, 86*(11), 1350. Available at http://www.ncbi.nlm.nih.gov/pubmed/22030649

This article emphasizes the importance of patient chronic disease self-management (CDSM) and self-management support by clinicians. A call for more training in the core competencies required for quality CDSM support is highlighted. Special attention is given to the inclusion of patients and their families as partners in education as a means of addressing chronic disease management.

66) Walters, J. A., Courtney-Pratt, H., Cameron-Tucker, H., Nelson, M., Robinson, A., Scott, J., Wood-Baker, R. (2012). Engaging general practice nurses in chronic disease self-management support in Australia: insights from a controlled trial in chronic obstructive pulmonary disease. *Australian Journal of Primary Health, 18*(1), 74-79. Available at http://www.ncbi.nlm.nih.gov/pubmed/22394666

This article analyzes the potential for general practice nurses to adopt the role of self-management and health behavior change. Researchers found that for those nurses whose roles had previously included some chronic disease management, the training enhanced their understanding and skills of self-management approaches and increased the focus on patient partnership, prioritizing patients' choices and achievability. Researchers found the training effective, but acknowledged significant system barriers that need to be addressed through funding models and organizational change.

67) Wamsley, M., Staves, J., Kroon, L., Topp, K., Hossaini, M., Newlin, B., O'Brien, B. (2012). The impact of an interprofessional standardized patient exercise on attitudes toward working in interprofessional teams. *Journal of Interprofessional Care, 26*, 28-35. Available at http://www.ncbi.nlm.nih.gov/pubmed/22233365

This article describes an interprofessional standardized patient exercise (ISPE) and evaluates its impact on students' attitudes toward working in interprofessional teams. Students were assessed using the Attitudes Towards Health Care Teams (ATHCT) survey. Researchers found there were significant differences in attitudes toward team-based care by profession and that faculty and student satisfaction with the ISPE was high. These findings contribute to the growing body of literature on efforts to generate positive attitudes toward interprofessional collaboration early in training, which may influence students' ability to be effective members of healthcare teams.

68) Yank, V., Laurent, D., Plant, K., & Lorig, K. (2012). Web-based self-management support training for health professionals: A pilot study. *Patient Education and Counseling, 90(*1), 29-37. Available at http://www.ncbi.nlm.nih.gov/pubmed/23031610

This article evaluates web-based self-management training for health professionals. Researchers found that the training for health professionals was feasible and changed beliefs and confidence. The

program may maximize patient self-management by increasing provider self-efficacy and skill for self-management support.

APPENDIX B: HEALTH PROFESSION CURRICULAR GUIDELINES AND COMPETENCIES

1) Health Resources and Services Administration, the Josiah Macy Jr. Foundation, the Robert Wood Johnson Foundation, the ABIM Foundation, in collaboration with the Interprofessional Education Collaborative. (2011). *Team-Based Competencies: Building a Shared Foundation for Education and Clinical Practice*: *Conference Proceedings.* Retrieved from http://www.aacn.nche.edu/leading-initiatives/IPECProceedings.pdf

2) Interprofession Education Collaborative Panel. (2011). *Core Competencies for Interprofessional Collaborative Practice: Report of an Expert Panel.* Washington,D.C.: Interprofessional Education Collaborative. Retrieved from http://www.aacn.nche.edu/education-resources/IPECReport.pdf

3) American Association of Colleges of Nursing. (2012). *Adult-Gerontology Acute Care Nurse Practitioner Competencies*. Developed in collaboration with The Hartford Institute for Geriatric Nursing at New York University and the National Organization of Nurse Practitioner Faculties. Retrieved from http://www.aacn.nche.edu/geriatric-nursing/adult-gero-acnp-competencies.pdf

4) Association for Gerontology in Higher Education. (2008). *Standards and Guidelines for Gerontology and Geriatrics Programs, Chapter 11: Geriatrics Curricula for Undergraduate Medical Education in Osteopathic Medicine*. Retrieved from http://www.aacom.org/InfoFor/educators/mec/curriculum/Documents/GeriatricsCurricul. pdf

5) American Association of Colleges of Nursing, in collaboration with Developed in collaboration with the Hartford Institute for Geriatric Nursing at New York University. (2010). *Recommended Baccalaureate Competencies and Curricular Guidelines for the Nursing Care of Older Adults: A Supplement to The Essentials of Baccalaureate Education for Professional Nursing Practice.* Retrieved from http://www.aacn.nche.edu/geriatric-nursing/AACN_Gerocompetencies.pdf

6) American Association of Colleges of Nursing. (2013). *Competencies and Curricular Expectations for Clinical Nurse Leader Education and Practice.* Retrieved from http://www.aacn.nche.edu/cnl/CNL-Competencies-October-2013.pdf

7) Partnership for Health in Aging (TBD). *Multidisciplinary Competencies in the Care of Older Adults at the Completion of the Entry-level Health Professional Degree.* Retrieved from http://www.geriatricspt.org/pdfs/PHA-Multidisc-Competencies.pdf

8) The American Occupational Therapy Association. (2009). *Blueprint for Entry-Level Education. Retrieved from* http://www.aota.org//media/Corporate/Files/EducationCareers/Educators/Blueprint_FINAL.ashx

9) World Federation of Occupational Therapists. (2008). *Entry Level Competencies for Occupational Therapists.* Retrieved from http://www.wfot.org/wfot2014/pdf/Entry_Level_Competencies_Draft.pdf

10) The American Occupational Therapy Association, Inc. (2008). *Occupational Therapy Assistant Model Curriculum.* Retrieved from http://www.aota.org/-/media/Corporate/Files/EducationCareers/Educators/Model%20OTA%20Curriculum%20-%20October%202008.ashx

11) Association of American Medical Colleges (2009). *AAMC Geriatric Competencies for Medical Students.* Retrieved from http://www.pogoe.org/Minimum_Geriatric_Competencies .

12) American Dental Education Association (TBD). *Oral Health for Independent Older Adults: ADEA/GSK Predoctoral Curriculum Resource Guide*. Retrieved from http://www.adea.org/publications/Pages/OralHealthforIndependentOlderAdults.aspx

13) Knight, B.G., Karel, M.J., Hinrichsen, G.A., Qualls, S.H., & Duffy, M. (2009). Pikes Peak Model for Training in Professional Geropsychology. *American Psychologist*. Vol. 64, No. 3, 205–214. Retrieved from http://www.wgec.org/resources/art/psychology.pdf

14) American Society of Consultant Pharmacists (2007). *Geriatric Pharmacy Curriculum Guide, Second Edition.* Retrieved from http://www.wgec.org/resources/art/pharmacy.PDF

15) Association for Prevention Teaching and Research, endorsed by the Interprofessional Education Collaborative. (2013). *Advancing Interprofessional Clinical Prevention and Population Health Education: Curriculum Development Guide for Health Professions Faculty.* Retrieved from https://ipecollaborative.org/uploads/APTR-HPCTF_IPE_Crosswalk_2013.pdf

16) Hoge M.A., Morris J.A., Laraia M., Pomerantz A., & Farley, T. (2014). *Core Competencies for Integrated Behavioral Health and Primary Care.* Washington, DC: SAMHSA - HRSA Center for Integrated Health Solutions. Retrieved from http://www.integration.samhsa.gov/workforce/Integration_Competencies_Final.pdf

17) Engdlander, R., Aschenbrener, C.A., Call, S.A., Cleary, L., Garrity, M., Linderman, B., Minter, R., Thomas, J., Flynn, T., Carraccio, C., Fulton, T., Liberman, S., Lypson,, M.L., Rosenfield, J., & Wilson, M. (2014). *Core Entrustable Professional Activities for Entering Residency.* Retrieved from https://www.mededportal.org/icollaborative/resource/887

18) National Direct Service Workforce Resource Center, Centers for Medicare & Medicaid Services. (2013). *Core Competencies for the Direct Service Workforce Version 3.0.* Retrieved from http://www.dswresourcecenter.org/tiki-index.php?page=Training

19) American Geriatrics Society. (2013). Geriatrics Review Syllabus: A Core Curriculum in Geriatric Medicine (GRS8). Retrieved from http://www.geriatricscareonline.org/ProductAbstract/geriatrics-review-syllabus-8th-edition/B003/

20) American Psychological Association. (2013). Health Service Psychology: Preparing Competent Practitioners. Retrieved from http://www.apa.org/ed/resources/preparing-competent-practitioners.pdf.

APPENDIX C: MCC KEY INFORMANT DISCUSSION GUIDE

"Evaluating Education and Training Materials on Multiple Chronic Conditions for the Healthcare Workforce"

Key Informant Discussion Guide

Interviewee(s):

Organization:

Interviewer(s):

Note Taker:

Date of Interview:

A. Introduction

- Thank you very much for agreeing to participate in this conversation. My name is [_____] and I work at Abt Associates, a research and evaluation firm located in Cambridge, MA.
- Recently funded by the Office of the Assistant Secretary for Health (OASH) to develop core competencies, curricula, and training modules for health professionals focused on caring for people with multiple chronic conditions (MCC).
- The project has 3 main activities: 1) conduct an environmental scan and develop an inventory of training/curricula for health professionals focused on MCC; 2) create a framework for workforce training and education related to MCC; and 3) develop curricular content to address specifics
- We are now reaching out to key stakeholders across various professions (e.g., physicians, nurses, pharmacists, physician assistants, social workers) to better understand the work you are doing to train the healthcare workforce to care for patients with MCC. We're looking to organizations like yours for recommendations on existing curricula and training materials (across the full spectrum of education and continuing education) related to MCC, and other guidance on how we should think about training and curricula for HCPs on MCC.
- Are you comfortable with us sharing the name of your organization and/or results from this conversation in either a public report or manuscript? Are you comfortable with us recording this conversation, as a back-up to our notes?
- Do you have any questions before we begin?

B. Questions

1. Could you please describe the work your organization is doing to integrate multiple chronic conditions into (insert profession) education and training?
   - i. Do you have any training efforts underway?
2. Do you have (or know of) any existing training materials or curricula that address MCC specifically? We're interested in materials along the continuum of health care provider education – from undergraduate to graduate to clinical training to continuing education.

3. What do you see as the 3 key competencies or skills needed to care for the growing number of people with MCC?
   - Are these competencies unique to the care of MCC patients? If so, how or why?
   - Are the competencies the same for all health care professionals?
   - What competencies would be essential to include in a Framework for health care professional training and education on MCC?
4. What about training or curricula related to specific areas important to effective care delivery for patients with MCC, like care coordination, medication management, patient-centered care, patient engagement, integration of MH & PH, self-management support, cultural competency)?
5. Are there specific types of materials that are most needed (or most useful) – like didactic content, or patient cases, or videos, or practice-based content for internships, for example?
6. Where are the gaps in healthcare professional curriculum and training for preparing future practitioners to care for patients with MCC – whether the gaps are in skills, content, or even a specific professional groups' understanding of MCC?
7. What do you see as the barriers to training health care professionals to provide high-quality care for persons with MCC?
8. How important do you think interprofessional or team-based care is to effective delivery of high-quality care to persons with MCC on a scale from 1 to 10: 1 being not at all important to 10 being extremely important?
9. Given our 3 project goals (developing a repository of materials; a framework for MCC training and education; and new curricular content to address gaps in MCC), is there anything else that you think would be helpful for us know?
10. Once we have compiled the inventory, if the training materials are deemed useful and useable by your organization, would you be willing to make your membership aware of this resource? If so, what mechanisms do you have to make the materials available (for example listserves, newsletters, webposts)? Could you post a link to the resource website from your organizations website?
11. Is there anyone else that you think we should talk to who could be helpful on this topic?

Thank you again for taking the time to meet and share your thoughts with us! Can we contact you again if we have additional questions?

APPENDIX D: TECHNICAL EXPERT WORKGROUP (TEW) MEMBERS

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